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SOVIET UNION ECONOMIC AFFAIRS

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FEEDBACK ON SELYUNIN'S NOVYY MIR ARTICLE ON DATA DISTORTION

Craftiness or Ignorance

Moscow VESTNIK STATISTIKI in Russian No 6, 1987 pp 53-55

[Article by V. Knyazevskiy, doctor of economic sciences, professor, head of the Statistics Department at the Rostov Institute of the National Economy: "In Connection with the Underhanded Article About Figures"]

[Text] Recently V. Selyunin and G. Khanin suddenly noted that Soviet statistics has fallen into utter decline, and they have so reported to the readers of NOVYY MIR. At the same time they also told about the poor opinion they have of the science of economics, which "...does not enjoy a great reputation with the public" (p 187). The article gives stunning calculations performed on their "own initiative" (p 182), to show that the USSR Central Statistical Administration does not know how to count and that it is grossly deceived by planners and production managers, who are in "silent agreement" (p 183), i.e., to put it more simply, in collusion. Mention is even made of the "downfall of statistics" (p 189) and of many other things as well.

What moved V. Selyunin and G. Khanin to picture statistics in such a bad light and along the way put dabs of black paint on the science of economics as well? The background is absolutely necessary if one is to put the discovery which they alone have made into a bit better light! Unfortunately, the authors of the article give scant explanation of certain important details of their discovery, saying that "...the public is more interested in the reliable figure itself than in the accuracy of computation," and they imply that the feeling that the result obtained is correct, combined, of course, with common sense, is quite sufficient in appraising authenticity (p 192).

But we recall the words of F. Engels about the surprising transformations which common sense sometimes undergoes when it dares to leave its four walls and enter the space of scientific investigation, and that is why we would like to have something more convincing from the authors. For example, certain details of their calculations. But obviously we are left only to guess about them.

It would seem that the main idea of the article's authors lies in replacement of the so-called "value" index of volume, used by official statistics, by a

physical index. A physical index, of course, as understood by the article's authors.

The former, the authors say, is full of distortions, since prices are scandalously manipulated in order to hike up growth indicators. The latter can only be accurate; the authors argue this by taking 48 products of machinebuilding in physical terms (that is, the number of pieces), and calculating the average growth of the volume of these products over the period 1956-1975, they get an indicator equal to 4.24. In value terms the entire output of machinebuilding grew 9.36-fold according to official data, which in the opinion of the article's authors is incorrect. They add that over the period 1976-1983 the distortion of the value indicator of growth increased still more: in physical units production of equipment grew 9 percent, but in rubles 75 percent (p 182).

It is hard to say whether there is more craftiness or ignorance involved here. Here is why we say that. The authors of the article do not say how they obtain the average growth indicator equal to 4.24 from the 48 individual indices. Did they use weights in calculating it? If not, then they would have had to resort to a simple unweighted average arithmetic index of the type:

$$I = \Sigma i/n.$$

It does not require prices, since it makes it possible to remain within the framework of the purely physical record of output. But it is only out of grief or ignorance that one might be seduced by this index. An index of this type was proposed by Karli back in 1764. Everything that can and needs to be said about it has already been said, so that we not need expand any further on the subject.

If the authors understand the absolute need to weight the individual indices in obtaining the summary indicator of the rate of growth of the volume, then why do they play around and pretend that they have done without prices? After all, there is nothing else but the volumes of differing products in value terms that can be used for this purpose! Any index that is a weighted average and that has been competently compiled is easily transformed into the aggregate form

$$I = \Sigma Q_1 P_0 / \Sigma Q_0 P_0,$$

which is in fact what the official statistics uses.

So how is it that the authors had a parting of the ways with official statistics when they made their calculations according to the same method as is used by the USSR Central Statistical Administration (we suspect them more of craftiness than of ignorance!)? First of all, because they took in their calculation only 48 different products of machinebuilding, while official publications contain data on the /entire/ [in boldface] output of this branch. Second, they have greatly simplified the physical record itself. For example, they count tractors of /different/ [in boldface] models as simply "pieces," which cannot be added since they are quite different. It goes further than that. In their rough count they have closed their eyes to the substantial growth of the average capacity of the "piece" of each product of machinebuilding: the tractor,

the motor vehicle, the locomotive, and so on. Such a rough count in "pieces" as the authors make use of cannot be seen as a model for imitation.

We understand the author's desire to eliminate prices from computations, since we know what complicated problems arise in connection with their use in computing output indices. They distort the magnitude of those indices even when the planners with manifestly criminal inclinations described in the article have not yet managed to get their hands on them, they always depart from the value, and that's what spoils everything. Just take the present, when we have decided to eliminate the distorting effect of the materials intensiveness of the product, these deviations have become a source of differences in the "profit intensiveness" of normative net output, and that means that they are also a reason for new distortions of the volume index. However, in spite of what we have said above, we consider the search of ways to eliminate prices from calculation of these indices a direction that leads up a blind alley.

The way out needs to be sought elsewhere--there has to be improvement of pricing, bringing the price closer to the product's true value. This is important not only for statistics, but also for solving many major problems in the socio-economic area. In the area of social welfare the negative impact of the defec-tiveness of prices is also felt rather strongly, and this has become a topic of discussion. That is why there is every reason to turn attention to the prob-lems of pricing. But these matters, as is well known, do not lie in the juris-diction of the USSR Central Statistical Administration. It cannot invent for itself "its own" prices, but must use those which have been set according to regular procedure. Of course, we cannot wait until "ideal" prices appear, we have to improve the methodology of recordkeeping, relying on the system of prices that exists in the country, which is in fact what is done, perhaps more slowly than one would like.

The problems of improving the methodology of statistical recordkeeping are very complicated. The authors of the article cannot fail to mention this--after all, they themselves have not managed to propose anything realistic, although they have in fact been thinking about the problem for more than a year. The author's proposal that volume indices be calculated on the basis of representa-tive products cannot be taken seriously. The use of representative products involves still greater distortions in the growth rate of the volume of output than using imperfect prices. Moreover, this method is still unable to eliminate the distorting influence of the imperfect prices.

The authors of the article should have frankly stated that they are proposing an index that does not take the entire output into account, but only a sample group of products, without attempting to imply that they are recommending for use a more "physical" index, one computed more "in kind," than the one now used by the USSR Central Statistical Administration.

Which is why the authors did not have to answer the questions which would inev-itably have occurred to any reader. Here are just some of them: How does one prevent arbitrariness in arriving at the set of representative products for a sample observation of the growth rate of output, how in this connection is one to reconcile differing viewpoints as to the importance or unimportance of

particular products; how, if one is relying on a permanent set of representative products (and it must be permanent, since otherwise nothing remains of the authors' idea), is it possible to react to the emergence of new and improved products; doesn't the attempt to measure the growth rate of the volume of output with a sample set of products have the result that all the efforts of the productive plant will be concentrated solely to increase the output of that restricted number of products?

If the authors know the answers to these and other similar questions, then why did they not find room for them in their extensive article and why did they prefer instead to divert the "public" with discussion about the snow that fell the year before last (p 184)?

The article "The Tricky Figure" involuntarily forces us once again to look at the curricula for specialization in the field of economics. In the present curricula there is nothing left of statistics but "the hole in the doughnut." The 10 topics in the standard syllabus in the theory of statistics in present curricula are actually given 6-7 lab periods (taking into account that some of the time is lost because of farm work). That makes about half a lab period per topic! And they include such topics as "Indices," to which the problems we have just been discussing here directly pertain.

The situation, of course, has to be changed. This issue has been raised more than once in a number of conferences. But always by VUZ professors. Perhaps it should also be raised on behalf of the USSR Central Statistical Administration; after all, the quality of statistical recordkeeping in the country also depends on the statistical literacy of economists, even those who do not themselves work in the agencies of the state statistical system.

FOOTNOTE

1. V. Selyunin and G. Khanin, "The Tricky Figure," NOVYY MIR, No 2, 1987, pp 181-201.

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Getting Facts Straight

Moscow VESTNIK STATISTIKI in Russian No 6, 1987 pp 55-58

[Article by T. Kozlov, doctor of economic sciences, professor, head of the department of statistics of Moscow Order of Lenin and Order of Labor Red Banner Institute of Railroad Transportation Engineers]

[Text] It would be difficult to pass over the journalistic sketch printed in the journal NOVYY MIR under the title "The Tricky Figure," in which Soviet statistics as a whole has actually been portrayed in a negative light.

The sketch touches upon an extensive range of problems, some of which do not pertain directly to statistics. Without concerning ourselves with the latter,

for example, which sphere of railroad transportation capital investments are to be committed to, let us dwell briefly only on certain questions that pertain directly to the theory and methodology of Soviet statistics.

Let us note first of all that the authors of the sketch treat many historical facts in the field of statistics quite arbitrarily. Thus they write, for example: "Up to the beginning of 1930 computation of indices was concealed" (p 189). This assertion on the part of the authors does not correspond to reality. There are many publications in which one can easily see that this is not the case. By way of confirmation we will refer to certain publications of the statistical yearbook "Narodnoye khozyaystvo SSSR" [National Economy of the USSR]. For instance, in the yearbook published in 1956 figures are given on the growth of the "physical volume of industrial output of the USSR over the period 1913-1955," including data for 1940 and subsequent years, and the data of 1913, 1928, 1940, and 1950 were moreover taken as the basis of comparison (pp 45-47). The yearbook "Narodnoye khozyaystvo SSSR v 1957 godu" gives figures on the volume of output of the principal branches of industry of the USSR and the United States (p 148), the basic indices of wholesale prices of enterprises for the principal branches of industry (pp 226-228), the price indices of farm products on city kolhoz markets (p 763), etc. Moreover, the explanations given for the various indicators referred to in the yearbook refer to those prices being compared that were used in determining the indices of a number of volume indicators, stating that the gross social product and national income were computed in actual and comparable prices.

The following prices were taken as comparable prices in computing the growth rates of the national income: 1926/27 permanent prices up through 1950, 1951 prices for the period 1951-1955, 1956 prices for the period 1956-1958, and 1958 prices for the period 1958-1965. The prices of 1965 are used as comparable prices after 1966.

References might be made to other yearbooks all the way up to the last one (for 1985), which also contains indicators in comparable prices (see, for example, pp 42-43, 131-136, etc.), but even those we have referred to are enough to show that the authors of the article "The Tricky Figure" are either not informed about their subject or for some reason they are "being tricky" and knowingly distorting the facts.

Development of the theory and methods of determining index numbers is an indubitable achievement of Soviet statisticians, both the theoreticians and also the practitioners. Having revealed the unsoundness of the formalistic foundations of the bourgeois theory of index numbers, Soviet statisticians made the principle of reflecting the content of processes in the national economy on the basis of a comparison of real economic categories the basis of building up index numbers. To be specific, it is to the credit of our statistics to have worked out a method of discovering the influence of structural shifts on the basis of index numbers of variable and constant (fixed) composition; it has come to be widely used in scientific research and practical work.

In determining the indices of the volume of output Soviet statistics has manifest advantages over bourgeois statistics, since it possesses data on the

entire range of output produced, and that is why it can describe the growth rate of output as a whole of the entire industrial sector and of its separate branches or groups, for example, Group "A" and Group "B." Bourgeois statistics, which usually is dealing only with a set of products of particular types, is deprived of this capability. Moreover, in the selection of particular products, which is what the authors of "The Tricky Figure" are militating for, subjectivity is not precluded.

The authors of "The Tricky Figure" actually oppose using indicators in current prices. One can hardly agree with this without qualification, since in economic circulation in any particular period there are products in those prices which correspond to that period. This is related to many computations, including payments into the budget. That is why there is a certain interest even in dynamic series in current prices. It is a different matter when the question is raised of describing the change in the volume of output as a sum of use values. In that case we use comparable (unchanging) prices, i.e., the index numbers of the physical volume of output are determined, and they are regularly published.

The authors of the sketch are constantly setting up in contrast to the data of official statistics their own data calculated by a methodology which remains a riddle to the reader, since the nature of it is not revealed in any case. For example, the average growth of 4.24-fold for 48 products in physical terms is set against the 9.36-fold growth of the value of the output of machinebuilding over the period 1956-1975. This comparison is unsound from a scientific standpoint, since differing indicators, indicators moreover calculated by a differing methodology, are being compared with one another.

The authors of this sketch repeatedly write that they are using different methods to calculate the indicators, including "precise" methods (p 182). But unfortunately all of this remains unknown to the reader, and that is why it does not seem possible to trust the reliability of the figures they offer.

This equally applies to the many examples given to confirm particular conclusions and deductions. For instance, they write: "The Central Road Transport Administration reports on the performance of the branch in 1930 as follows: 'How much was actually carried is not precisely known.... It has to be admitted in all frankness that we do not know what kind of economic entity we are managing'" (p 189).

The absence of a reference to source does not allow us to ascertain what branch of transportation is involved and who is the author of the notation given and how reliable it is. Nor is a source title given for the figures of V. Faltsman (p 191) which were borrowed, and there are many other such cases.

The authors refer to individual examples, in particular to the practice of production and sale of lighting fixtures in Moscow (p 187), to confirm their negative evaluation of the theory and practice of Soviet statistics. It is proper to mention in this connection what V.I. Lenin had to say in his unfinished piece "Statistics and Sociology," in which he sharply criticizes those who attempt to frame deductions and conclusions from individual examples. Because of

the complexity of social phenomena, V.I. Lenin remarks, it is always possible to pick out both examples which confirm a particular conclusion and also those which refute it, which is why in examining social phenomena it is absolutely necessary to rely on the full totality of the facts pertaining to the phenomenon being investigated.

Proceeding on the basis of this principle of Lenin's, it can be said that concerning the example of lighting fixtures we lack precisely that totality of the facts on the basis of which we might draw conclusions concerning the development or state of Soviet statistics. Moreover, the figures given in the example are not confirmed by calculations, and that is why the reader must take them on faith, although in and of themselves they are highly dubious (even in view of all the unseemly dealings of the organization that acts as the middleman, it is hardly likely that its profit was fourfold greater than the wage fund of its personnel). It is not clear from this example what kind of doubling of sales is involved--that of the retail organization or the intermediary organization. After all, these aspects of the circulation of commodities represent different categories, which is why neither of them can be doubled at the expense of the other.

Nor do the authors show excessive modesty in their treatment of other questions. It is well known that party documents beginning in April 1985 have thoroughly and comprehensively covered the strategies of our country's future development and have convincingly substantiated the need for a radical transformation of all spheres of the life of society, a transformation that is revolutionary in its character. That is why after more than 2 years it is hardly suitable for the authors to speak as though their "evaluations confirm the absolute need for changes" (p 193).

When one examines carefully the content of the journalistic sketch "The Tricky Figure," one gets the impression that its authors gave in to the temptation to have an impact that is to a certain extent sensational, and that is why in many cases they sinned against the truth.

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Article 'Devoid of Concreteness'

Moscow VESTNIK STATISTIKI in Russian No 6, 1987 pp 58-60

[Article by N. Sheremet, candidate of economic sciences, docent, Moscow Order of Lenin and Order of Labor Red Banner Institute of Railroad Transportation Engineers]

[Text] The article by V. Selyunin and G. Khanin was hardly addressed exclusively to that "public" with which the science of economics does not enjoy a high reputation (p 187), especially since it was aimed in its conception to "literate economists" as well (p 192), although the authors also assume that the latter do not include any Anokhins, Kolmogorovs, Semenovs, Kapitsas (p 187), and that the overwhelming majority are conscientious toilers who are far from indifferent as to the state of economics in society and to the way it is reflected in official Soviet statistics.

It is beyond dispute that there is a need for serious improvement in the field of statistics. This was quite definitely confirmed by the 27th CPSU Congress. Soviet statisticians took the reproach addressed to them as a guidepost for their immediate constructive changes, including those which pertain to improving the reliability of statistical data and perfecting the methodology of analyzing them.

The authors make curious statements to the effect that all statistical information "is becoming shaky guesswork" (pp 183-184); that "an incorrect analysis and ultimately several distorted figures lay at the root of the series of fatal mistakes" (p 184); that "it is possible to live comfortably without producing anything at all except a number" (p 187), etc. It would be good to have an explanation as to why in the face of the "downfall of statistics" (p 189) the authors still repeatedly rely on its data in their arguments and even call upon the reader to check the calculations made in the article against the statistical yearbook "Narodnoye khozyaystvo SSSR" (p 182)?

It is not unfortunately possible to check everything, especially in the case of calculations which represent the "private initiative" of the authors (p 182) and as which as a rule were done by "more complicated, but also more accurate methods" (p 192), and even "more subtle methods" (p 182). As is evident from the article, most of the calculations referred to have already been done on the order of 10 years (p 183). But what is the essence of these procedures and methods, why are they complicated and subtle? This cannot be learned from the article under discussion. And it really is a pity that one of its authors (to be sure, it is unclear which) "for a good 10 years has been exclusively concerned with explorations into methods of economic analysis" (p 192). That obviously is not a bad thing, nor is it a bad thing that "he has developed six computational procedures to compute rates of development of the industrial sector, three for construction, and three more methods for measuring the dynamic behavior of the national income, and so on" (p 192). But why has not a single article on the results of the work he has done been indicated, nor is the reader initiated into the results of the scientific discussion of that work? Is all of this not a consequence of the trickiness of the procedures measured, and possibly even of the authors themselves? In vain do they believe that "the reading public is more interested in the authentic figure itself than in the subtlety of the computation" (p 192). We are interested in both.

It should be noted that the authors not only display an unwarranted desire not to "fatigue the reader with calculations" (p 197), but they even ignore the most elementary requirements of scientific and journalistic debate.

At the very outset of the article (p 181) they refer to a curious fact which a chauffeur who communicated it to one of the central newspapers by writing in. But what kind of chauffeur, what particular newspaper, and when? We know nothing about all this.

Then the authors mention a case (p 195) in which the question of the return on capital investments was raised in one of the discussions in a small group of economists. Neither the character of the discussion nor the makeup of the audience is clear to the reader. Everything is devoid of concreteness and

excessive importance seems to be given to those arguments which are offered the reader without any opportunity of a real verification of their accuracy and indisputability. Following such a "discussion" the recent session of the "Business Club" of the newspaper PRAVDA, for example, which was devoted to the current problems of pricing, measurement of economic growth, and labor productivity, and remuneration of labor, a session in which representatives of economic departments and ministries, the heads of scientific institutions and enterprises, scientists, and specialists took part, seems positively "modest."(1) In analyzing the state of affairs in railroad transportation, the authors refer to the note (!) on railroad cars which the leading figures of the branch presumably showed to them. There is no question that if the history of the note's occurrence and further destiny are to be believed, this is a case of disorder. But it is striking, to put it mildly, how neglectful the authors of the article are of the official statistics on the question they are studying. For instance, in casting suspicion on the figures contained in the "document" referred to, they assert that the average daily run of a freight car increased only 5.2 percent over the period from 1959 to 1984, rising until 1971 and then beginning to fall, so that the figure in 1984 was 8 percent worse than what it was in 1971. Which leads to the conclusion: here for three 5-year planning periods the railroad people have been utilizing their rolling stock worse and worse (pp 185-186). It is easy to see whether or not this corresponds to reality if one examines the official statistical data taken from the statistical yearbook "Narodnoye khozyaystvo SSSR"(2) and given in the following table.

Average Daily Freight Car Run on All USSR Railroads, km

<u>1959</u>	<u>1970</u>	<u>1971</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>
222.5	256	258.2	249	227	232	224	234	239	239

In order to avoid misunderstandings we should issue a caution that we do not have the least intention to deny the problems of transportation here, much less embellish the true state of affairs in the sector. It nevertheless seems that the authors are abusing the reader's confidence in the infallibility of their calculations, and in arguing that the indicator of the average daily run of a freight car has been steadily deteriorating over the last three 5-year periods, they are simply refusing to note that this indicator has nevertheless improved during the last 5-year period. Ignoring the principle of fully appreciating the entire totality of facts pertaining to the phenomenon under consideration, the authors offer the reader an example of a manifestly tendentious analysis.

As though revealing a commercial "secret" of the branch to the "reading public," they declare: "The last accessible reserve was thrown into the battle: the Ministry of Railways ordered an increase in the so-called static load. We will explain. A freight car...has a reserve of strength. If it was designed, for example, to carry 62 tons of freight, then it will carry 70 tons without falling to pieces. That is in fact what they are doing now. A difficult decision" (p 198).

One gets the impression that the authors do not understand the very mechanism of using the reserve for increasing the static load. It is not a case by any

means of exceeding the technical standard load on the freight car come hell or high water (although in a number of cases it is possible that this has in fact occurred), but of bringing its real value closer to the standard. From the economic standpoint this would mean an improvement in freight car utilization with respect to capacity, but not with respect to its operation in an emergency situation. It is clear that the authors simply are not familiar with the theory and practice of railroad statistics concerning this matter.

Nor are they thoroughly familiar with other matters either. They state on pp 191-192 that there are at least five ways of measuring utilization of fixed productive capital: the output-capital ratio, profitability, the shift coefficient of equipment, utilization of motor capacity, and the amount of idle time. "Whenever they are all talking about one thing," the authors say, "then they should say the same thing" (p 192). Here the authors not only commit editorial inaccuracies, but they also show outright incompetence in matters of statistics. We wonder why the utilization of capacity is confined to motors and what kind of idle time we are talking about? After all, if you look at any textbook in industrial statistics, you see that there are indicators of the utilization of fixed productive capital as a whole, including the output-capital ratio (and including profitability here is debatable); there are indicators of utilization both as a whole and also separately with respect to time and capacity of energy equipment; there are indicators, along with analogous classification, of the utilization of production equipment, where shift coefficient is only one of the representatives of an entire number of indicators of utilization of equipment over time. So why must the indicators enumerated by the authors "say one and the same thing"? Can we take the authors' word for it that a "literate economist" would not believe the figures of the output-capital ratio and profitability and would look into the three latter indicators (p 192)? The authors of the article did not provide an answer to the questions we have put, since they have a very confused and unclear conception of them.

So to whom was the article "The Tricky Figure" addressed? Perhaps to the "public" that does not read?

FOOTNOTES

1. PRAVDA, 23 March 1987.
2. "Narodnoye khozyaystvo SSSR v 1959 g," statistical yearbook, USSR Central Statistical Administration, Moscow, Gosstatizdat, 1960, p 497; "Narodnoye khozyaystvo SSSR v 1922-1972 gg" [The National Economy of the USSR Over the Period 1922-1972], anniversary statistical yearbook, USSR Central Statistical Administration, Moscow, Statistika, 1972, p 299; "Narodnoye khozyaystvo SSSR v 1983 g," statistical yearbook, USSR Central Statistical Administration, Moscow, Finansy i Statistika, 1984, p 318; "Narodnoye khozyaystvo SSSR v 1985 g," statistical yearbook, USSR Central Statistical Administration, Finansy i Statistika, Moscow, 1986, p 329.

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Adamov: 'Sensationalist' Statement

Moscow EKONOMICHESKAYA GAZETA in Russian No 29, Jul 87 p 14

[Article by Prof V. Adamov, doctor of economic sciences, "Polemical Remarks": "What Is Behind the Indices"]

[Text] One of the most important tasks facing Soviet economic scientists is the elaboration of scientific foundations for the fundamental restructuring of statistics. What path is to be taken? I think that sensationalist statements like the ones made in V. Selyunin's and G. Khanin's article "The Tricky Figure" (NOVYY MIR, No 2, 1987) are hardly of any help in this work. The conclusions drawn in this article regarding the results of the 70 years of our economy's development have prompted me to express my viewpoint on this score.

Topics on which the press kept silent in the past have begun to be freely discussed in the course of restructuring in our country. Unfortunately, however, some authors make claims based on emotions and "feelings" rather than on a profound and cool analysis without any prejudice. Freedom of discussion does not mean freedom from the need for a scientific approach and competent examination of complex economic problems and phenomena on the pages of the press, especially the mass readership press.

The restructuring of all aspects of social life which has been launched in the country forces us to provide a correct and unembellished assessment of the past, reveal the difficulties that have emerged, and perceive their cause, the new tasks, and the ways to solve them. A detailed analysis of these questions is contained in the materials of the 27th CPSU Congress and the CPSU Central Committee January and June (1987) Plenums. The substantiation of conclusions is particularly important in assessments of the past and in the analysis of existing shortcomings and of the essence of current problems, especially if these conclusions are based on different calculations and comparisons. But this substantiation is not to be found in all the material on these questions. The article "The Tricky Figure," for example, contains a number of what we consider unsubstantiated stipulations in parallel with correct critical remarks. The authors hold that economic reporting in our country was quite truthful until the mid-twenties, but that, beginning in 1925, "the situation started changing as management became more centralized."

The authors assume that primary report data are directly included in national economic statistics without being in any way verified and clarified. This is what provides a basis for their attempts to sharply reduce (by dozens of times on occasions) the rate of the USSR's economic development. Specifically, the authors base their calculations on a selection of representative commodities rather than on total accounting data, holding that total accounting leads to major distortions in state statistical data. No one would deny that the struggle against exaggerated reporting and distortions in state accounting is of great practical importance. But primary source distortions are excluded from accounting in the practice of state statistics, and the methods of balanced comparisons of various data are used for monitoring purposes. But we are not talking at all about justification of existing shortcomings in statistical

accounting. They do exist, and no one would deny that. The issue revolves around the methodological correctness and scientific substantiation of calculations.

It is hard to agree with, for example, the claim that the existing practice of total accounting for the volume of output produced at comparable prices and the subsequent calculation of annual indices of the dynamics of production volumes on the basis of these data could lead to a severalfold inflation of results, even over a long period of time. First, as a matter of statistical practice, whenever there is a transition to new prices to be used for comparison purposes, the output actually produced in the preceding year is calculated at the new prices for comparison with the valuation of the current year's output in order to determine growth rates. Second, the volume of production for the preceding year is recalculated according to the methodology and taking into account any changes in the enterprise's organizational structure during the year under review. For the authors' information: When enterprises are divided, any possible effect of double counting, which so perturbs them, is ruled out. Third, the comparability of the current and preceding years in question is ensured, while growth rates over prolonged periods of time are determined by the chain method--by way of multiplying the annual growth rates. On the whole, the methodology used by the USSR Central Statistical Administration guarantees that data are determined with only a minimum of error when determining growth rates over a prolonged period of time. This methodology is applied by many countries in their statistical practice.

The authors are profoundly convinced that the most correct results can be obtained from data on the production of individual types of output and the subsequent calculation of composite indices of physical volume using some method of weighting individual indices for representative commodities. This practice has existed for a long time in many capitalist countries. But this is because they, as a rule, have no total accounting data, the availability of which is seen by all major statisticians abroad as a serious gain by the statistical science of socialist countries.

The article makes it clear that the suggested calculations are based on batches of commodities comprising between 50 and 100 types of machinebuilding output and on data on fewer than 60 types of commissioned production capacities expressed in physical indicators. Meanwhile, statistical accounting has data on the commissioning of capacities for more than 300 types of output, while machinebuilding produces several thousand denominations of output.

The calculations based on a limited range of commodities and used by the authors of "The Tricky Figure" cannot be accepted as sufficiently representative, and this is easy to prove using the simplest of examples. Let us use the USSR Central Statistical Administration data for the manufacture of finished rolled ferrous metal products in 1971-1985, seen by the authors as sufficiently authentic. There was a 34-percent growth in the output of finished rolled ferrous metal products during that period, including 100-percent growth in rolled low-alloy steel products, 220-percent growth in heat-treated rolled metal products, 440-percent growth in curved sections, 90-percent growth in cold-rolled sheet metal, and 110-percent growth in coated sheet steel. At the same time,

growth in the manufacture of many other types of rolled metals was below average, while the growth in some of them was much below average. If growth rates were to be determined according to one of these two last categories, the figures would inevitably be distorted.

Any results can be obtained on the basis of random selection. For example, if we were to take 50 types of output with relatively low growth rates, the result would be a 29-percent decline in production during the tenth and eleventh 5-year plan periods. If we were to take a different 50 types, where production grew faster, growth would more than triple in result. The total for these 100 types would produce a 90-percent growth. All these results are equally incorrect. But, given an unconscious approach and the corresponding presentation, each one of them would strike and amaze the reader because they all differ from the published index of 149 percent.

Let us try, for example, to evaluate the growth of U.S. industrial output in 1976-1985 on the basis of an arbitrary selection of commodities. The average index for a group of 58 products gives a result of 188 percent, while according to official data the growth was 146 percent.

The indices of physical volume of output suggested by the authors, calculated as averages of the individual indices of output growth of the representative commodities, are altogether incapable of taking into account any progressive changes in the intersectoral and intrasectoral structure of production. The point is that new types of output, assimilated by production units for the first time during the given period, cannot be compared with anything, since they were not in production during the preceding period. But the methodology used in the practice of state statistics makes it possible to take into account all types of output, reflecting also the results of scientific and technical progress in the rate of production growth.

Looking at the authors' methodology in greater detail, one ought to dwell in particular on the choice of weights to be applied to individual indices. If, for example, we were to use as weights the data on the costs of production for individual types (in comparable prices) and were to assume that all items produced were taken into account, the physical volume index would be equal to that calculated in statistical practice which the authors distrust so much.

A different picture would emerge if different weights were to be used (size of work force, cost of fixed capital, electricity consumption, and so on). The article lets it be understood that composite indices are built on the basis of types of output from the extracting sectors, food and light industry, and agricultural production, since representative commodities are easier to select in them. But for some unknown reason, in doing so the authors have overlooked an obvious fact: Production growth rates in these sectors are known to be lower than in the sectors of industry which determine technological progress in the national economy.

Of course, it is virtually impossible to fully implement any theoretical system of production volume indices. When it comes to new types of output started up by production units during the year under review, statistics are forced to use

as comparable prices the established prices of the 1st year of series manufacture, and not the prototype or provisional prices at all, as the authors imagine.

The actual methodology used by the authors predetermines the resulting sharply reduced growth rates. This is the cause of the stunning conclusion that national income in the USSR increased by a factor of 6-7 in the period between 1928 and 1985. But according to data published by the USSR Central Statistical Administration, the national income produced in 1940 was 5.1 times greater than in 1928, and there was a further increase by 16.8 times between 1940 and 1985.

Even the well-known British economist A. Nove, author of numerous monographs on the Soviet Union's economy, and who cannot be accused of harboring any sympathies for the socialist system of economic management, writing in the January issue of the journal SOVIET STUDIES, based his calculations on the growth of the USSR's national income in 1971-1983, when the rate of economic development was slower. He concluded that this growth had been 168.5 percent, against the 182 percent according to data published in the USSR--in other words, he reduces it by approximately one-tenth. But the authors, taking a longer period when the rate of the country's economic development had actually been faster, are inclined to "correct" (in other words, to reduce) the growth of national income by a factor of 12. If we were to accept that the volume of national income produced over the period 1928-1985 increased 6-7 times, the correlation between the United States and the USSR in terms of this index in 1985 would remain the same as in 1928 (8-12 percent). In other words, it appears that a national income equivalent to just one-tenth of the U.S. national income makes it possible to maintain parity in the USSR and U.S. defense potential, and is a source of vast sums for the reconstruction of production and new construction, investment in agriculture, and so on. A simple calculation would show that this claim by the authors of "The Tricky Figure" leaves almost nothing for the consumption fund. As opposed to indices, state statistics determine the correlation of national income on the basis of a selection of representative commodities that is much more complete than the selection used by the authors of the article. In 1985 this correlation stood at approximately 66 percent. One could argue about the effect of various factors on these data, but this would not change the magnitude of this figure.

The article also contains conclusions on other, less general matters, which could be described either as ignorance of fairly evident truths or as the result of a desire to present yet another "sensation."

The authors of the article correctly note that synchronism is typical of many economic phenomena, but draw totally incorrect conclusions from this. It is extremely difficult to use output growth rates in one or even several industrial sectors to judge growth rates in other sectors. For example, as the production of plastics and composite materials and the output of radioelectronics and other instrument-building sectors develop, the link between ferrous metallurgy output and machinebuilding output as a whole becomes substantially weaker, and in many cases is altogether absent. For example, the volume of ferrous metallurgy production in the United States declined somewhat (93 percent) in 1961-1985, while the rate of output growth in machinebuilding and

metal processing reached 307 percent. The correlation of growth rates in these sectors in the USSR was approximately 2.7 during the same period.

The comparison of the growth rates of electricity consumption and industrial production volume in the USSR and the United States is even more "interesting." The authors hold that energy consumption and production growth develop at approximately the same pace. The growth of energy consumption in industry in proportion to the growth of production in this sector was 0.9 in the USSR and 0.8 in the United States in 1976-1985. The growth of energy consumption in industry in terms of kilowatt-hours was even somewhat higher in the USSR. According to the authors' logic, the growth rate of industrial production in the USSR and the United States ought to be similar. And this is indeed so: The figures are 149 and 146 percent, respectively, according to official USSR and U.S. publications. The authors raise no doubts about the U.S. data, but refute the USSR Central Statistical Administration figures, evidently because this suits them better. Many more examples can be cited to prove the authors' desire to fit their own, really "tricky figure" into a prefabricated scheme of things.

And now about a few details. The authors hold that V.V. Osinskiy was the first chief of the Central Statistical Administration. Actually, its first chief was P.I. Popov, whose name is inseparably linked with the development of Soviet statistics under V.I. Lenin's direct leadership. The article mentions a number of major Soviet statistical scientists. I would like to also mention the services rendered to statistics by Academicians S.G. Strumilin and V.S. Nemchinov and many other scientists who devoted many years of their lives to the development of statistical methodology. Had the authors referred to the works of these scientists they would have avoided many mistaken approaches to the assessment of the pace of the socialist economy's development.

The restructuring of our statistics must be in line with the new tasks of the country's socioeconomic development. Accuracy of calculations, expansion of the system of qualitative indicators, and information on questions of regional and social development--all these are tasks for scientists and practitioners. But the ways to improve statistics have to be selected from positions of a strictly scientific and conscientious analysis.

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PLANT OFFICIALS COMMENT ON GOSPRIYEMKA

State Acceptance Differences Noted

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 17 Jul 87 p 1

[Article by V. Sancha, senior state acceptance representative at the Kamensk Machine Building Plant: "One's Own and Another's State Acceptance"; first two paragraphs are source introduction]

[Text] Kamensk-Shakhtinskiy, Rostov Oblast. With a heavy heart I enter the Kamensk Machine Building Plant's forge and press shop where they are making hydraulic supports for coal mines. The people selected here are intelligent and full of initiative. But it is precisely from here that waste also originates--through no fault of the plant workers.

Here lie, shot with blue color, just-cut bars of rolled steel. One can not bend and stamp bars that are high-quality in appearance for future supports--cracks are bound to appear because the Donetsk Metallurgical Plant is violating GOST requirements, supplying us with (unfired) rolled steel.

One of the best brigades of welders, headed by M. Chernov, was attempting to overcome the internal stress of the metal, maintaining the welding connection. But nothing came of this: if you maintain the connections, you exceed the dimensions. "We can not keep on working like this!" the brigade leader said to me, having tossed another defective bar into a pile of scrap metal. "State acceptance, adopt urgent measures..."

I go to the supply personnel, they get from the cabinets bulky binders and with just a few words it is clear: the red tape begins even during the submission and drafting of orders to Sevkavmettalsnabsbyt [North Caucasus metals supply and sales office]. Here are point-blank refusals to accept orders for the delivery of heat-treated rolled steel, for properly-cut sheet steel and for zinc-coated metal products. So that the plant would not be left with short supplies, the supply personnel have time and again had to compromise.

Oh, what the plant workers have had to do to get a delivery of, for example, heat-treated spring steel necessary for increasing the reliability of one of the basic connections of a support! Letters to the managers of the Donetsk

Metallurgical Plant and telegrams to the deputy chief of Soyuzuglemash [Coal Machinery Industrial Association], V. Ryabov, to the former deputy minister of the USSR Ministry of the Coal Industry, V. Gerasimov, to the chief of the State Committee for Standards' Metallurgical Industry Administration, V. Fedin. And all for nothing.

Understanding that state acceptance should not only "punish," but also help, we decided to help the machine builders through their own channels--via the territorial centers for standardization and metrology and the organs of state acceptance at the suppliers' plants. I read the response telegram of the state acceptance representative at the Donetsk Metallurgical Plant, V. But, and I do not believe my own eyes. In essence, he is expressing support for the departmental position of the enterprise's administration, which is contrary to the national economic interests. V. Skuchayev, the chief of the State Committee for Supervision of Standards' laboratory at the Zlatoust Metallurgical Plant, also reacts in exactly the same manner to my inquiry. Here, too, they refused to supply the Kamensk workers with hardened rolled steel, although we have instructions from Soyuzglavmetall [Metal Production Main Administration]. Since the local state acceptance does not perceive a violation of the GOST requirements on the part of the enterprise's managers: you yourselves, so they say, agreed to accept the output which you are now refusing.

It is necessary to recall the law: the consent of the consumer to accept an order with a deviation from the standard does not remove responsibility for the manufacture of poor-quality output. Especially since such consent is persistently secured by the suppliers themselves.

Even in December of last year, in checking the work of the Quality Control Department's bureau for external acceptance, we discovered a large number of substantial defects in output obtained from the Atkarsk Udarnik Plant in the Saratov Oblast, from the Leningrad Pnevmatika Plant, from the Plant imeni Petrovskiy in the Donetsk Oblast and from the Kargormash [mining machinery] Association. Managers from these enterprises, from Soyuzuglemash and the director of the institutes of the USSR Ministry of the Coal Industry came to us. The corresponding information was sent to the chiefs of the Leningrad and Saratov centers for standardization and metrology, V. Okrepilov and Yu. Fedukin. They amicably assured us: we will adopt special measures!

After several months, I was again forced to stop the assembly section of foreman N. Vdovichenko: the Atkarsk workers' high-pressure hoses and the Leningrad workers' hydraulic distributors were no good. Again, we send warning signals to the centers for standardization and metrology. The Leningrad workers respond: we conducted, so they say, a check and everything is alright. This is a lot of hot air and, in actual fact, we receive another batch of defective hydraulic distributors. Well, and the Saratov workers do not get around to responding at all.

I think the time has come to stop dividing all these matters into "one's own" and "another's."

Readers' Comments on State Acceptance

Moscow SOTSIALISTICHESKAYA INDUSTRIYA in Russian 24 Jul 87 p 2

[Article by L. Skoptsov: "The Craving for Strict Measures; A Review of Readers' Letters on State Acceptance"; first paragraph is source introduction]

[Text] State Acceptance... "Some associate these words with the hopes for improvement in the quality of goods, since we are all potential consumers both in everyday life and in production; others tremble at these words and among them are the workers of those enterprises which have changed over to state acceptance--there is non-fulfillment of the plan and loss of wages and many other unpleasantries," this is how the situation was depicted by B. Khavkin, deputy production chief of the Textile Machinery Plant imeni Kalinin in Klintsa, Bryansk Oblast. They know the exactingness of the extra-departmental inspectors at the plant by more than hearsay: at the beginning of the year, more than half of the putput was sent back by state acceptance for refinishing because of its low quality.

B. Khavkin, just like lathe operator A. Akimov from Podolsk, electric fitter Yu. Streglov from Zhdanov and several other of our readers, are not against the new service in and of itself, but against that resoluteness with which the state acceptance representatives have tackled the matter. "And today we can not wholly approve the decision about such a sharp change of attitudes towards the production collectives, without having given them time for the similar transition from quantity to quality," is how A. Krutkis, a reader from Mezdurechensk in Kemerovo Oblast, finished his own letter. "This year should not be considered the conclusive one but rather just the preparatory one. The enterprises are not capable of abruptly changing their own attitude with regards to quality."

It is true that Comrade Krutkis has somewhat lost sight of the fact that time for preparation had been given--more than half a year. Also not concealed was the bitter experience of 33 plants to which State Committee for Standards inspectors were sent back in 1985 and where, at first, they rejected up to four-fifths of the production as totally useless. But the preparation for operation under the new conditions had been successfully ruined at many enterprises. "Some had hoped that this was another campaign that would somehow blow over, as had happened previously, and others did not figure that the state acceptance representatives, and these were workers of these same enterprises, would be so principled that it would not be possible to find a common language with them and compromise solutions. But all the hopes of such managers were crushed and proven to be in vain," wrote B. Khavkin, summing up the deplorable results of the preparatory period.

We are all tired of slipshod work and inaccuracies. "The less strictness there is, the more waste there is!" indignantly wrote I. Solokhin, a reader from Kaluga. And this is why in the majority of letters, the readers do not merely support extra-departmental inspection, but rather, demand its further expansion. These letters express confidence in state acceptance as an organ for the protection of the public interests in the face of departmental and

corporate selfishness. "I have traversed the path from worker to enterprise director," wrote G. Vorobyev, currently chief of the labor safety department of the Nikolayev Oblast trade unions council, in a brief but impassioned letter. "I consider such an organ as state acceptance as one that needs to be introduced in all spheres of production and the sooner, the better." Joining in this sentiment, V. Zelentsov from Novosibirsk wrote, "If state acceptance had been introduced immediately after the war, how much better we would have lived and how many resources we would not have wasted in vain."

Naturally, questions also arise among the readers. The main one is--does not state acceptance contradict the intention of the economic reform and is it not an attempt to solve the problems of quality and reliability using old--administrative measures?

The cardinal solution of the problem of quality, in fact, lies only in the economic levers. In other words, good work should be profitable and poor work should be ruinous. Such a mechanism is only now being established. But until such time as it is included properly in operations, the enterprises will receive what it distributed to them "from above" and they will pay--whether the purchase is good or bad--not out of their own pockets but in the end from public money. It turns out that the use value, i.e., the product quality, is outside the control of the consumer. And this means that it is on the conscience of the dictator-supplier. In the last third of the month and the quarter, when the producers show a clear lack of conscientiousness, the first victim of the battle of the plan is always quality.

As was mentioned at the June Plenum of the CPSU Central Committee, in the course of a specific transition period, at the one and the same time, both the new and the old methods for managing the economic system would be in effect. And quality and the habit of observing technological discipline were already needed yesterday and one could no longer wait and procrastinate.

This is why the necessity has arisen for the state to take upon itself the monitoring of the quality of the most important types of output. The measure, in actual fact, is an administrative one, but it sharply shifts the accents in the evaluation of the operations of the enterprises and compels them to include internal plant mechanisms, including economic ones, which are aimed at increasing the quality of the output. Thus, the introduction of state acceptance is completely in tune with the spirit of our times. The CPSU Central Committee Politburo, at its own recent meeting, acknowledged that it was necessary to introduce in addition state acceptance at more than 700 of the most important industrial enterprises, including the agricultural industry and the construction industry.

The readers are interested in such a question as: what prevents the plant's Quality Control [QC] Department from carrying out the functions entrusted to state acceptance. Is it only the low level of the special training of the inspectors and the extremely low mobility and inflexibility of the equipment, as engineers V. Razgulov and N. Yerokhin from Voronezh figure? How correctly candidate of technical sciences V. Kopylov from Volgograd notes that the personnel are left with the very same methods and means of inspection, the very same, but what is different is just one thing: their attitude. "Indeed,

state acceptance has the last word as to whether or not the realized output will be. One can not argue with state acceptance the way one does with the QC Department."

This is the whole point. It had been possible to argue with the QC Department. The biggest thing that the plant inspectors could venture to do was to inform the management and permit themselves to be persuaded to take a position of not letting the collective down, which was not at fault, that the associated plants are always letting them down, that the suppliers are letting them down, that the equipment is old and that the plans are unrealistic.

Yes, state acceptance is strong as an instrument for objective evaluation so long as it does not depend on those it is examining. Understandable, therefore, is the attempt of those examined, for one or another plausible pretext, to harness it to the production chariot. Also understandable is the concern of the readers about whether or not state acceptance will become a regular member of the large company of evaluators of another's work (S. Martynov, an engineer from Vladimir). All the more so since the channels of pressure on its workers remain. And these channels are already being used.

I think that those of our readers are correct who figure that the importance of the task entrusted to the state acceptance representatives and the particularly delicate nature of their mission, which also affects monetary expenditures and the reputation of the mass of workers, require exceptional attention towards their working conditions. It is possible there is sense in analyzing the initial experience and defining more precisely the social and legal status of the new service. Particularly valuable here are the comments of an experienced person--an experienced inspector with 22 years of service, V. Zelentsov:

"A brief commentary on the personality of the state acceptance worker. At first, workers of the same factory could be used in state acceptance, but no longer, for this is harmful. A person is a person and the job of state acceptance is psychologically most difficult, since the punishment for waste must be only in rubles. He should not yield to provocation, blackmail, threats, bribes and other nasty tricks of the production workers, and all these things have been, are and will be, although we are also struggling against these manifestations. Acceptance should be independent of production. Apartments can be allotted by a given enterprise, but with the obligatory condition with regards to state acceptance that there should be a specified percentage which the plant is obligated to allot to these workers from the total number of apartments obtained by the plant. If this is not possible, then, under such conditions, the local soviets should allot them. If this is not observed, then, after a year or two, state acceptance will be under the heel of production during the solution of critical questions. And first and foremost--of social ones. And it will be more complicated for a principled state acceptance worker to obtain an apartment than to win the sports lottery."

This is what Muscovite S. Tuyev and other readers are talking about.

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GOSPLAN OFFICIAL, PLANT MANAGERS DISCUSS PLANNING CHANGES

Moscow PLANOVYE KHOZYAYSTVO in Russian No 6, Jun 87 pp 45-58

[Discussion with B. A. Rayzberg, department chief, Scientific Research Economics Institute, USSR Gosplan, doctor of technical sciences; V. A. Zhelezov, deputy chief, Economic Planning Administration, Minneftekhimprom [Ministry of the Petroleum Refining and Petrochemical Industry]; and others; conducted by N. Golovin and O. Yefimov: "Planning Under the New Conditions of Management"; first paragraph is source introduction; passages in all capital letters printed in boldface in source]

[Text] The restructuring of our nation's economy is closely connected to the realization of urgent tasks as changing the entire system for managing and planning our national economy, securing the proper interaction between centralized planning and the development of the autonomy of production associations and enterprises, and establishing the precise rights and obligations of central planning agencies, ministries and primary production links. A meeting in the journal's editorial offices was devoted to a discussion of these questions in which the following participated: B. A. Rayzberg, doctor of technical sciences; department chief, Scientific Research Economics Institute, USSR Gosplan; V. A. Zhelezov, deputy chief, Economic Planning Administration, Minneftekhimprom [Ministry of the Petroleum Refining and Petrochemical Industry]; V. K. Kornelyuk, deputy general director, Mytishchinskiy Machine Building Plant; and I. A. Bakaleynik, deputy general director, Vladimir Tractor Plant.

THE RESTRUCTURING PROCESS IS UNDERGOING INCREASING DEVELOPMENT IN ALL AREAS OF OUR LIFE AT THE PRESENT TIME. IT IS ALSO TAKING PLACE IN NATIONAL ECONOMIC PLANNING. IN THIS REGARD, I WOULD LIKE TO HEAR YOUR OPINION ABOUT THE RESTRUCTURING IN PLANNING, THE CHANGES THAT ARE TAKING PLACE IN ITS CONTENT, AND THE PROBLEMS THAT ARE ARISING IN THE COURSE OF IT.

[B. A. RAYZBERG] The restructuring of national economic planning in general and of centralized planning at the level of USSR Gosplan, ministries and departments in particular is an integral part of the radical reform of the economic mechanism and one of the main conditions of its integrated execution.

It should be noted that limited success and even failures in reforming the economic mechanism in our country starting in 1965 are in large measure explained by the fact that at the same time that we change the methods and forms of planning and management at the enterprise level, we essentially have not altered the character of planning work in the higher echelons of leadership.

And until recently, the restructuring of the economic mechanism has been faster and deeper at the level of the basic link compared with changes that have been quite faint in the central planning agencies, in functional committees, and ministries that are in charge of the development of branches in the productive and nonproductive spheres. But under conditions when centralized planning preserved the existing methods and organizational forms of planning work, it involuntarily braked the increase in the autonomy of enterprises and associations, and the strengthening of their role in the management of economic processes. At the same time, it would be no less dangerous to get ahead of ourselves in the restructuring of centralized planning, to transfer functions of planned management downward before the reform of the management mechanism at the level of the basic link will allow these functions to be realized reliably. Nonobservance of this condition threatens the loss of planomernost [systematicness] in the course of the period of transition which can aggravate still further the existing imbalance, scarcity, underdeliveries, and breakdowns in the reproductive process.

In the restructuring of planning, a decisive role is played by the rational distribution of planning functions. areas of planning activity, planning decisions, measures and indicators that are considered and approved at various levels of the system of economic management between individual organs of planning and management. At the same time, we must find a clear answer to the question: which planning decisions and indicators must be mandatorily established and approved within the framework of centralized planning by higher planning and management bodies (ministries, departments, gosplans of union republics, USSR Gosplan, and the USSR Council of Ministers), and which ones should be made independently and included in the plan by the enterprises and associations themselves?

In our view, centralized planning under the new conditions should extend its action to include the following basic areas of planning activity:

--the establishment of rates and proportions of socioeconomic development and of the structure of social production; the distribution of centralized capital investments and limited resources; consolidated and synoptic indicators of development; the scale of solution of social problems during the plan period; directions of scientific-technological breakthroughs (national economic and interbranch--at the level of USSR Gosplan, the bureau for interbranch complexes and all-union departments; republic--at the level of gosplans of union republics; branch--at the ministry level);

--determination of the volume of production of the most important types of products of national significance in physical terms (by USSR Gosplan--approximately 500 items in the five-year plan and 1000 items in the one-year

plan; ministries--up to 20 product mixes depending on the specialty of the branch);

--the planned distribution of the constantly narrowing range of limited material-technical resources and the centralized assignment of suppliers to customers;

--drafting and approving long-term integrated social, scientific-technological, and regional programs of an interbranch character that have a pronounced goal orientation and that require for their implementation no more than one-third of the available capital investments projected for the plan period;

--the establishment of economic norms governing wages and the distribution of the incomes of cost accounting [khozraschet] enterprises that are stable for the duration of the plan, financial and credit restrictions, management rules, economic sanctions, and effectiveness norms.

All other plan indicators and targets are articulated by the enterprises and associations themselves on the basis of contractual relations, customer's demands and targets for raising the technical level of production, profitability, for observing sociocultural interests of collectives, and making goods and services competitive in the domestic and foreign markets.

State targets established by the centralized plan must have priority and must be mandatory but at the same time, their fulfillment can be regulated by "vertical" contracts and can be secured by centrally allocated material-technical resources.

[I. A. BAKALEYNIK] On the whole, it is possible to agree with B. A. Rayzberg's methodological approach to restructuring problems in planning. Nevertheless, at a time when we are in the initial stage of the restructuring of the economic mechanism, we must examine the results of measures already instituted and determine what is hindering our progress. Unfortunately, it must be said that the key element in the system for managing the national economy--planning--affects the restructuring process to a very insignificant degree. It basically preserves the features, characteristics, and shortcomings that it has inherited from the traditional economic mechanism.

The equation of planomernost with centralized planning "from top to bottom," with administrative obligatoriness of plan targets, with the concentration of all decisions at upper levels of management is obviously the point of departure in most problems. A phenomenon that can be called the "cult of the indicator" originates. The system of indicators becomes the basic form of existence of the plan, they grow in number and complexity, and the accountability sphere becomes an independent area of activity. Performance is evaluated on the basis of indicators and the changing of indicators is considered a panacea.

There have been unsuccessful attempts to combat this phenomenon. In particular, it has not been possible as yet to reduce the number of indicators that are planned for enterprises and associations while branch and territorial

organs of management equally ignore their division into indicators that are approved and accounting indicators. The gross output indicator, which has been repeatedly consigned to anathema and has been entirely rejected by the Olympus of report data can serve as a typical example. From the second half of last year, this indicator once again became the basic de facto if not de jure indicator. Strange as it might seem, this metamorphosis took place in connection with the affirmation of the policy of intensification and acceleration. In the given instance, in some places the rich and complex concept "acceleration" was reduced to the growth rates of volume, to the race for "val" [gross output], to which economic managers had managed to become unaccustomed during the years of economic experiments.

Against the background of heightened responsibility for report results, the new race for rates leads to the return to the old errors. In the face of the need to "secure growth rates," the urgent problem of structural reform, of strengthening the "rear" of technological progress and socioeconomic development, of eliminating disproportions and lag in the auxiliary economy and infrastructure is postponed until better times. Thus, the logic of the administrative system and the fetish for reports lead to the intensification of extensive methods of managing the economy.

Many examples of the "struggle" for such indicators could be cited. We shall confine ourselves to two. As is known, a new procedure for reflecting export deliveries in economic performance has been introduced since January of the current year. Wholesale list prices are replaced by contract prices that are recalculated through differentiated currency coefficients [DVK's]. The difference between wholesale and contract prices (taking DVK's into account) is quite considerable and comprises approximately two percent of the planned volume of commodity output for the association's entire export program. Under the difficult conditions of the first quarter, there was the temptation to include the indicated difference in the report not only sold and commodity output in actual prices but also gross output in stable prices of 1982. And this was done in accordance with the request of Minselkhozmash [Ministry of Tractor and Agricultural Machine Building] for which, incidentally, gross output, formally speaking is neither an approved indicator nor an indicator that is used to evaluate performance.

This is, so to speak, a fresh example. But here is an example "with a beard." For many years, the Lipetsk Starting Engine Plant has supplied the Vladimir Tractor Plant starting engine PD-8 as a component. The Vladimir people attach it to the D-144 engine with two bolts and send the "starter" on its way in the opposite direction--to the Lipetsk Tractor Plant. This entails using transport, expending labor on loading and unloading operations, and considerable losses as a result of damage to engines in the shipping and unloading process. However, by sending the little "starter" from Lipetsk to Vladimir and back, it can be included a third time in the report on gross output volume. But if the decision were made to install the starting engine directly in the process of assembling the tractor at the Lipetsk Tractor Plant, both the plan for volume and growth rates would be threatened--after all, irrational cooperation is in a manner of speaking "built in."

Administrative-distributive methods of conveying indicators from top to bottom, mandatory planning based on the "existing level," and the evaluation of economic performance on the basis of current report results still retain their positions in a practical sense. Democratization of the system of national economic planning is a most urgent task in this regard.

[V. K. KORNELYUK] While on the whole sharing this evaluation of the state of restructuring of national economic planning, I consider it necessary to note that the actual principles of centralized planning are occasionally subjected to doubt under the guise of criticism of administrative-bureaucratic methods of management. Nevertheless, the role of centralized planning under modern methods of economic management is objectively growing.

In the discussion of the draft Law on the State Enterprise (Association), the press subjected the existing procedure for planning the production and distribution of products in physical form to serious criticism. The national economy presently manufactures millions of items. Naturally, it is impossible to centrally plan this entire product mix in physical terms and the customers for these products even with the aid of computers. And no one is setting such a goal.

But we also cannot agree with proposals that the production of all products in physical form be determined by demand only through the establishment of direct ties, through wholesale trade, etc.

The truth would seem to lie in the middle. The ignoring of demand and needs in the planning of output in physical terms leads to such negative consequences as the accumulation of unsalable inventories of raw materials, supplies and products not only in trade organizations but at many industrial enterprises as well.

The planning of consumer goods production should be converted to direct orders from trade organizations, but this process is by no means as simple as it might appear from the outside. Beyond a doubt, trade will learn to determine market conditions precisely, that we will not have a repetition of shortages of bed linen, lightbulbs, or other vital necessities and, that on the other hand, reliable barriers will be erected against the production of products that are not in demand. An enterprise that produces products the customer does not need must be left without any kind of excuses.

Nevertheless, the successful transition to direct orders from trade is very problematical without the strengthening of the material-technical base of producer enterprises, without a guaranteed supply of raw materials, and this takes time and resources. There is a shortage of certain goods, raw materials and production capacities that will be felt in the immediate future and therefore it would be premature to discontinue the centralized planning of the production and distribution of certain types of goods.

As regards machine building, which supplies productive fixed capital for all branches of the national economy and which determines the technical level of productive capital, for all the appeal of making the transition to direct ties between customers and producers, it does not appear possible to discontinue

the centralized planning of the product mix now or in the foreseeable future. The state through the centralized planning mechanism--five-year targets for the basic product mix, state orders or other indicators--secures the development of the economy in the required direction, implements a progressive technical policy, and shapes demand for the means of production. It is specifically this that is seen to be one of the principal tasks of USSR Gosplan.

The centrally established product list should be periodically reviewed and curtailed without detriment to the customer or to the production of new machinery. There are a number of superfluous items and items that are simply curiosities. For example, the same product is planned as two different items: as spare parts and as assemblies and parts used in manufacturing the product.

On the whole, the centralized planning of the basic product mix of our association is entirely justified. Without it, it is unlikely that the "MMZ" Production Association would produce dump trucks operating on compressed gas for use in cities, automatic loaders, and other small series especially in view of the fact that customers prefer to acquire a dump truck that has reliably proven itself rather than a new dump truck.

[V. A. ZHELEZOV] I first of all consider it necessary to note that branch ministries and departments must not act toward one another as opponents or as opposing sides but rather as equal partners in addressing common national economic problems. The activity of all these organs is directed toward the attainment of the same goal--the maximum satisfaction of the needs of society and each of its members for one or another specific product with the minimum expenditure of all types of resources.

The improvement of the system of management must be first and foremost aimed at accelerating the growth rate of the effectiveness of the end results of production, excluding elements of interference in the cost accounting activity of enterprises. At the same time, a ministry cannot be separated from oversight over the course of fulfillment of one- and five-year plans, especially in the case of indicators approved in state plans. Thus, the USSR Minneftekhimprom deals with the production of products that are absolutely essential to the functioning of all branches and of the national economy as a whole and therefore it specifically must oversee and coordinate all this work and exert an ongoing influence on the branch's activity.

What is more, the role of such coordination grows since under the conditions of complete cost accounting, the interests of enterprises may objectively conflict with national economic interests. The need to increase the production of mazut due to weather and climatic conditions can serve as an example. Such a task cannot be addressed without altering the structure of petroleum products of many oil refining enterprises.

When we speak about the restructuring process, we must emphasize the following in particular. Its successful realization requires consistency in the implementation of the decisions that are made. I specifically refer to the following: we continuously emphasize the paramount importance of fulfilling the delivery plan, but today we are primarily called upon to fulfill the

commodity output plan. But we have not conveyed it to the enterprises and they are not accountable for it. But we are trying to bridge the gap between the commodity output plan of ministries and the commodity output plans of enterprises. We do not have a very clear understanding of the reason why such a decision was made, all the more so because net output has served as the basic indicator used to evaluate our ministry's performance since that year. And now a paradoxical situation has developed at a number of plants: the net output plan is not fulfilled but the commodity output plan is overfulfilled. No one needs this kind of manipulation of indicators.

THE RESTRUCTURING PROCESS IN TIME COINCIDES WITH THE ELABORATION OF THE CONCEPT OF THE 13TH FIVE-YEAR PLAN. WHAT NEW ELEMENTS DOES THE RESTRUCTURING PROCESS INTRODUCE INTO THE EFFORT TO FORMULATE THE FUTURE FIVE-YEAR PLAN AND WHAT QUESTIONS MUST BE RESOLVED IN ORDER THAT THE PLAN WOULD BE THOROUGHLY SCIENTIFICALLY SUBSTANTIATED?

[B. A. RAYZBERG] First of all, it is essential to raise the level of substantiation of centrally determined indicators of the next five-year plan. The concept of the 13th Five-Year Plan will be a component part and will stem from the long-term concept of socioeconomic development up to the year 2005, the Comprehensive Program of Scientific-Technological Progress Up To The Year 2010, and the Comprehensive Program of Scientific-Technological Progress of CEMA Member Nations up to the year 2000. The new five-year plan is called upon to attain the positions established in the Basic Directions of Economic and Social Development for the Period up to the Year 2000 and the new Program of the CPSU approved by the 27th CPSU Congress.

Thus, the concept of the state plan for the 13th Five-Year Plan is formulated and thoroughly substantiated from the standpoint of the long-range economic strategy and the tasks of economic social development confronting the nation's economy in the next 15-20 years.

At the same time, the new five-year plan will be elaborated with regard to change in the organizational structures of management, the formation of a number of multiple-branch complexes such as the agro-industrial, machine building, fuel-energy, construction, chemical, metallurgical, consumer goods and services, sociocultural, and foreign economic complexes.

In the compilation of the 13th Five-Year Plan at the national economic level, it is planned to reduce the number of centrally established, mandatory plan indicators several fold.

It is planned to bring the organization of the elaboration of the draft of the Basic Directions of Economic and Social Development for the five-year plan, the draft plan, and the deadlines for conveying them to the performers into line with the new constitution of the economic mechanism thereby ensuring the active participation of enterprises and associations in the drafting of the five-year plan and its integral incorporation of economic contracts, the independent formation of directions of technical retooling, and the modernization of the production apparatus on the basis of decentralized funds and own sources.

It is also planned to prepare and release in the coming year Guidelines on the Elaboration of Plans for Economic and Social Development that encompass planning processes at all levels (state, republic, branch, associations and enterprises) and the entire system of plans (long-range and current).

All this taken together promotes the substantial restructuring of five-year planning in the spirit of the concept of the radical reform of the management mechanism formulated in the materials of the 27th CPSU Congress, the January (1987) Plenum of the CPSU Central Committee, and the draft of the Law on the State Enterprise (Association).

However the depth of the indicated restructuring of five-year planning may prove to be insufficient for bringing about an appreciable increase in its effectiveness, for bringing about the practical realization of the idea of creating a whole system for the management of the national economy. Under the new conditions of management, the five-year plan must be elaborated considerably in advance of the deadlines in the last quinquennium; the full cycle of work must be completed already in 1988. At the same time, methodological and organizational support for the drafting of the 13th Five-Year Plan is only in its initial stage.

[V. K. KORNELYUK] Several points should be clarified regarding the formulation of the 13th Five-Year Plan. First of all, it is essential that the enterprise be motivated to adopt an intensive plan, to use all of its potential. We have said much about this but essentially nothing is changing. As long as the middle-of-the-road spirit survives, many economic managers are disinclined to believe that they will be among the winners if they significantly improve their work. For the present, leading enterprises frequently conceal the sins of lagging enterprises, work to the limit, and frequently ultimately peter out and begin lagging themselves through no fault of their own. Our association can serve as an example. Enterprise collectives should be interested in finding for themselves as much work as possible rather than fending it off as is frequently the case.

We must also strive for a thorough understanding of pricing. The reform has not truly affected the pricing mechanism. And if we speak of the all-round introduction of self-supply and self-financing while the existing price mechanism remains unchanged, it is difficult to hope for success. If we do not resolve the price issue, we will have difficulty securing the stability of plan indicators.

[V. A. ZHELEZOV] I want to support the idea of the need for the earliest possible improvement of pricing. This is an urgent problem. After all, it is specifically in pricing that problems pertaining to profit, profitability, and payments to various funds are solved to a considerable degree. Prices and norms--these are what concern many managers when the plan is formulated. And these questions must be resolved as soon as possible.

The problem of norms is closely associated with this problem. Norms must be stable for all years of the five-year plan and must be established beforehand. Everyone agrees with this but it is not always observed in practice. What is more, norms at the present time are frequently established on the basis of the

existing level. This means that enterprises with high performance are in a less favorable position than those with poor performance. This is unjust and must be taken into account in the elaboration of norms for the new five-year plan.

[I. A. BAKALEYNIK] High hopes are indeed placed in the normative method of planning but the realization of its potential is primarily the business of the future. The present norms and modes of applying them can hardly be called a major step forward. They are "built into" the traditional system of planning and adaptations to it, reflecting such of its features as the absolutization of the "base" or existing level. Incremental norms are based on the idea of stability and are calculated more for preserving rather than changing the status quo. The use of absolute norms usually leads to their differentiation on the basis of the individual features of each enterprise or more precisely the previously existing "base." Individualized, unstable norms essentially remain the function of the plan and are updated with each change in the situation.

The increase in the nomenclature of the applied norms hardly makes planning "more" normative. For example, there appeared norms of material-intensiveness per million rubles of commodity output, declining for each year of the five-year plan. The idea is clear, but in evaluating its future, it is useful to recall the situation with the Lipetsk starting engine.

SINCE YOU HAVE TOUCHED ON NORMS, PERMIT ME TO ASK AN ADDITIONAL QUESTION IMMEDIATELY. OF LATE, MUCH IS SAID AND WRITTEN ABOUT NORMS, BUT THE EMPHASIS IS PRIMARILY ON PROFIT DISTRIBUTION NORMS AND ON NORMS FOR FORMING VARIOUS FUNDS. BUT NORMS GOVERNING INVENTORIES OF RAW MATERIALS AND AUXILIARY SUPPLIES ARE FREQUENTLY FORGOTTEN DESPITE THE FACT THAT ENTERPRISES HAVE ACCUMULATED ABOVE-NORM INVENTORIES VALUED AT MANY BILLIONS OF RUBLES AND ENORMOUS VOLUMES OF MATERIAL STOCKS THAT LIE LIKE A DEAD WEIGHT. WHAT CAN BE DONE TO PUT ALL RESERVES INTO ACTION, SO THAT THERE WOULD BE NO SHORTAGES IN THE PRESENCE OF ABUNDANCE, SO THAT EVERYTHING WOULD BE IN PLAY?

[V. K. KORNELYUK] Frankly speaking, above-norm inventories are the primary concern of the deputy manager for economic affairs. None of the other enterprise services are concerned with this because it is not in any way reflected in their work. Above-norm inventories are created primarily for one reason: the enterprises' suppliers are uncertain that they will receive the necessary materials on schedule in the necessary quantity. If they order something extra but that is in short supply, they have something to barter. And if there is no money to pay for it, let the supplier have the headache. Above-norm inventories today are very large, but the unfortunate thing is that a large part of these inventories becomes unusable because it is for the most part stored out of doors due to the lack of warehouse space.

[V. A. ZHELEZOV] In my opinion, inventories of finished products in Gossnab [State Committee for Material-Technical Supply] warehouses should be planned. Then there will be certainty that the enterprise's work rhythm will not be disrupted because of interruptions in supply, that it will always be possible to call upon Gossnab for assistance. Otherwise, the tendency to build up above-norm inventories for all contingencies will not be overcome.

The development of wholesale trade in raw materials and supplies should also be instrumental in curbing inventories but excessively high hopes should hardly be placed in this form of supply at the present time.

THE NEW CONDITIONS OF MANAGEMENT PRESUPPOSE CHANGE IN THE FUNCTIONS OF CENTRAL PLANNING AGENCIES, MINISTRIES, ASSOCIATIONS, AND ENTERPRISES. ALL THIS SHOULD PROMOTE THE CREATION OF CONDITIONS FOR EXPANDING THE AUTONOMY OF WORK COLLECTIVES IN THEIR ECONOMIC ACTIVITY AND ITS INCREASED EFFECTIVENESS. HOW IN YOUR VIEW IS THE RESTRUCTURING GOING IN THIS AREA AND WHAT PROBLEMS STILL REMAIN TO BE SOLVED?

[B. A. RAYZBERG] Both economic science and planning practice have reached the conclusion that USSR Gosplan, as the central planning agency and economic science center of the nation should restructure its activity primarily by shifting the principal emphasis in its work. Thus, USSR Gosplan should shift the center of gravity of planning work from current and one-year planning to long-range and five-year planning.

There must be significant reduction of work on the detailed assignment of mandatory indicators, on day-to-day planning and regulation, on the adjustment of targets, on the redistribution of resources. There must be more emphasis on strategic, structural planning, on the establishment of rational reproductive proportions, in particular of an interbranch nature, on the formation of global avenues of intensification, on increasing effectiveness and improving quality, and on the satisfaction of social needs.

Some of the functions in the planning of the development of branches of the national economy and multi-branch complexes should be transferred to ministries and newly created agencies for managing complexes of interconnected branches of the national economy. Individual functions automatically disappear because they become the object of independent planning at the level of associations and enterprises.

But even under the new conditions of management, USSR Gosplan must preserve its function of securing the systematic, proportional development of the economy as a unified national economic complex, of creating priorities for the accelerated growth of the leading spheres of the economy, for the distribution of centralized capital investments, for drafting long-range programs in order to solve key national economic problems of an interbranch nature.

The role of USSR Gosplan as the head economic department must be raised substantially and its influence on the work of the Ministry of Finance, State Committee for Science and Technology, Gossnab, State Committee for Labor and Social Problems, Gosstandart [State Committee for Standards], the Central Statistical Administration, and the State Committee for Prices must be intensified.

USSR Gosplan is called upon to occupy leading positions in the planned establishment of rules and norms of economic activity, of economic norms that are conveyed to ministries, of the permissible level of differentiation of norms in accordance with branch specifics and the different initial states of

enterprises converted to complete cost accounting, self-supply and self-financing. In our view, it would be well to promulgate more detailed rules of economic activity on the basis of the Law on the State Enterprise.

USSR Gosplan should occupy a more active position in the substantiation of social needs, including the needs of social production as well as the needs of the population for goods and services based on rational consumption norms.

It is essential to improve the system of oversight over the course of implementation of the state plan, especially the five-year plan. There is a need not only for quarterly and annual oversight but also for reports on the course of fulfillment of the five-year plan determined as an ascending total from its beginning. To a greater degree, we should apply active anticipatory oversight on the basis of which measures can be devised to prevent departures from the development trajectory indicated by the plan.

As regards the restructuring of planning and management at the level of branches of the national economy, the role of ministries under the new conditions of management, and their place in the system of national economic planning, neither economic theory nor practice have as yet provided thorough, confident answers to all these urgent problems in the reform of the economic mechanism. These problems are also skirted in the draft of the Law on the State Enterprise (Association).

One would think that many problems pertaining to the reform of planned management at the level of branches of the national economy will find their solution at the forthcoming plenum of the CPSU Central Committee.

In the past, ministries viewed their basic role to be planning the structure, mix, and volume of products in greater detail than USSR Gosplan and USSR Gossnab and also in the tactical management of production, in the distribution of resources between enterprises in the branch, and in assigning them funds, limits, and resources. This range of planning and management functions of the ministry must be sharply reduced since the functions of production planning are in large measure transferred to enterprises while the supply of material-technical and financial resources must be based on contractual relations, wholesale trade, credit, and self-financing.

What are the basic functions of ministries under these conditions? They are several: securing the satisfaction of the needs of the national economy and the population for branch products through the corresponding specialization of enterprises and the implementation of branch policy for the modernization of production, its technical retooling and reconstruction, the implementation of branch programs of scientific-technological progress, the differentiation of economic norms among branch enterprises, centralized support of promising directions of use of new machinery and technology, and more active participation in the distribution of branch output (ministries can assume the functions of soyuzglavsnabsbys).

The general motto of such restructuring is to transform ministries into headquarters of scientific-technological progress. In this light, it seems advisable to transform main production administrations of ministries into

technical administrations for individual subbranches. Ministries should serve as a conduit for conveying centralized targets of scientific-technical programs to enterprises and associations, for raising the technical level of production and improving product quality, for product modernization, and for increasing the effectiveness of work.

[V. A. ZHELEZOV] The role of the branch ministry under the new conditions of management, given the increased autonomy of enterprises and their greater responsibility for their performance not only does not diminish but even grows in connection with the increased importance of possible consequences of their decisions to develop the branch and elaborate scientifically substantiated, long-term and stable economic norms for enterprises that determine their activity. In interrelations between the enterprise and the state, the ministry protects the interests of the state, not the enterprise. It is not an intermediary between them but is the fully authorized representative of the state, the implementer of its economic and social policy in the development of a given branch. In this regard, the ministry is not responsible for the enterprise's obligations, but the enterprise is responsible for the ministry's obligations.

At the same time, the branch ministry is a guarantor of the rights established for enterprises and the conditions of cost accounting relations of the enterprises with the state. There must be compatibility between centralization and the mandatory preservation of the cost accounting interests of the enterprise.

Accordingly, the ministry, as a state organ of government, must have state financial reserves at its disposal in order to compensate the consequences of decisions that worsen the economic plight of enterprises under the conditions of complete cost accounting and self-financing, the necessity of which is dictated by national economic interests. The reserves and centralized funds that form on the basis of existing statutes are essentially enterprise funds that are centralized for the purpose of stimulating and aiding enterprises and not for the purposes indicated above.

The imbalance and instability of the plan is to a considerable degree influenced by the lack of adequate material, production reserves and an organized system for managing them whereas the creation of such reserves is an obligatory condition to raising the role of five-year plans and to the successful functioning of enterprises operating on the basis of complete cost accounting and self-financing.

At the present time, any deviation of the need of individual customers, in particular, for petroleum products from the need indicated in USSR Gosplan and USSR Gossnab calculations, is resolved primarily by modifying the plans of the ministry and the enterprises accordingly.

In the process of creating a system of reserves, it is essential to elaborate and approve capacity utilization norms that take into account their partial reservation and to establish norms governing the optimal volume of reserves of raw materials and supplies, including remainders at enterprises.

Oil refineries, in particular, are urgently confronted with the need to increase reserves of petroleum crude. This requires the corresponding expansion of storage tank facilities in petrochemistry.

Under the new conditions of management, there is a significant increase in the need and in the part played by scientific development [nauchnyye razrabotki] in economics. It is closely connected to the ministry's practical activity. In particular, the development of long-term economic norms for enterprises is essentially a scientific critiquing of not only part of the general methodology but of every specific calculation. Normative acts defining the activity of enterprises under the conditions of complete cost accounting and self-financing and requiring constant improvement on the basis of cumulative work experience also need deep and thorough scientific critiquing and research.

The elaboration of long-range plans for the economic and social development of the branch, the disclosure of reserves, and the determination of the most effective directions of technological progress become one of the ministry's central tasks.

In this connection, we should examine the question of concentrating scientific work in general branch economics directly in the ministry and of enlisting the aid of highly qualified scientists and to pay them appropriately.

Basic improvement in the economic mechanism involves strengthening the economic levers of industrial management, giving enterprises broad economic autonomy and simultaneously increasing their economic responsibility for their cost accounting performance, and for strengthening the basic socialist principle: wages.

The restructuring policy is particularly palpable for our branch because starting with the current year all enterprises and associations in the ministry have been operating on a complete cost accounting basis and have been using in their planning practice the anticost indicator--net output, which in its economic content closely resembles the enterprise's actual income.

A decisive stride has thereby been made in the direction of creating a new economic mechanism, in the replacement of administrative levers with management by economic methods.

While it is naturally too early to speak about results, in itself the preparation for making the transition to the new conditions of management has shown that the mechanism behind economic norms, self-financing principles, and the net output indicator reveal in boldest relief both the positive and negative aspects of economic activity.

The view that many enterprise managers have of the content of the plan and its intensiveness is undergoing fundamental change.

Today the enterprise plan, which envisages lowering the economic level of work, is unacceptable to its collective because it automatically leads to the lowering of the enterprise's income level, to the infringement of the work

collective's economic and social potential. Thus the requirement for synthetic polyisoprene rubber declined by 80,000 tons (with a value of more than 100 million rubles) in the current year compared with the five-year plan calculations. In itself, this fact is positive and makes it possible to save considerable quantities of raw materials and energy. However the lowering of the utilization of capacities at enterprises that produce rubber results in the worsening of their indicators. In such a case, under the old conditions, the manager's principal task was to try to lower all the technical and economic indicators in the plan while preserving the incentive and wage funds; then, this would not alarm enterprise collectives. Under the new conditions, however, they cannot be satisfied with the lowering of the plan because this also means reducing the profit that is left at the disposal of enterprises and consequently that goes to the economic incentive funds; net output declines and consequently the wage fund declines as well.

Initially, some managers tried to raise the question of compensating losses on the basis of the ministry's reserve, which we cannot agree to since this violates cost accounting principles. Therefore the managers and work collectives of enterprises seek and find entirely different ways. For example, the Sterlitamakskiy Synthetic Rubber Plant, where the production of polyisoprene rubber has been reduced by 25,000 tons, devised measures making it possible to compensate this reduction completely on the basis of the organization of series production of new types of liquid rubbers.

It is very important that the new conditions of management be strictly observed at all levels of management of the national economy. This does not as yet exist. Enterprises are still confronted with the demand of fulfilling the gross indicator--commodity output in 1982 prices, which, as in the past, is oriented toward quantitative growth at any price regardless of changes in demand and the efficiency of production.

In the interest of reducibility of indicators of various branches, territorial organs do not consider the specific features of their work under the new conditions. The entire, large complex of various kinds of sanctions that were introduced when administrative methods of management were used and which contradicts cost accounting has not been revised and remains in effect.

Under these conditions, it is necessary to orient economic science and the work of USSR Gosplan and other departments toward the further development and improvement of the basic elements of the self-financing mechanism. This refers primarily to the economic norms governing the distribution of profits and the formation of funds, interrelations between the enterprises and the state on such a key issue as the use of own resources for the development of their production potential.

At the present time, enterprises have been placed in the position of bearing immeasurably greater responsibility for financially securing previously approved capital investments that were earlier allocated from the budget on a guaranteed basis on the one hand and are practically deprived of financial sources for carrying out additional enterprises at their own initiative to increase the effectiveness of their production on the other.

The transition to complete cost accounting is accompanied by the abolition of all types of special incentives (for conserving specific types of raw materials and supplies, for lowering the limit on material costs, for producing products bearing the state Quality Emblem, for increasing the production of consumer goods, for the assimilation and introduction of new machinery, etc.), i.e., economic incentive funds can be increased only to the degree that there is an increase in profits left at the disposal of the enterprise, absolutely regardless of how this increase was achieved. This corresponds to the principles of cost accounting and is therefore entirely justified.

Nevertheless, it is also necessary to revise all the special sanctions for derelictions that were developed for the purpose of forming economic incentive funds on the basis of fund-forming indicators that were independent of profit, at a time when the free profit remainder was transferred to the budget after deductions for the funds had been properly made. At that time there was justification for using a certain part of the sanctions to reduce the material incentive fund, for many-fold exactions for damage caused, and for the economic form of personal responsibility of managers for unlawful decisions. Under the conditions of complete cost accounting, however, these economic pressures are not part of the economic mechanism. What is more, they inhibit it and ultimately result in irreparable losses to the national economy.

If under the existing conditions, the volume of capital construction of enterprises does not depend on their economic performance and if the nonfulfillment of the profit plan creates only difficulties in the procedure for paying for capital construction, then under the conditions of self-financing the lowering of the profit that is left at the disposal of enterprises automatically leads to the lowering of the rate of development and to the stoppage of investment policy. As a result, this will lead to the violation of the principle of balance in the five-year plan and will undermine the economic and social program for the development of industry as a whole. Various kinds of penalties will reduce the funds by at least another 10 percent.

Do enterprises and the state, which are not responsible for one another's obligations, bear equal responsibility here?

When enterprises reduce the size of their inventory and the cost of equipment in use, they receive additional profit relating to payments for capital, i.e., approximately 6 percent of the reduction of the cost of capital, of which more than 40 percent is paid to the budget.

But if the cost of productive capital grows, enterprises lose profits in connection with payments for this capital and, what is more, pay higher interest on above-norm working capital or uninstalled equipment.

Enterprises receive only equivalent profit from the cost of economized electric power. Less than 60 percent goes to economic incentive funds on the basis of norms, including a mere 9.5 percent to the material incentive fund. If, however, the limit is exceeded, be it even on the whole and if an additional profit is derived, the enterprise loses 10 times more. As regards

sanctions charged against the material incentive fund, if they are preserved in their previous form, the dimensions of the reduction of the material incentive fund will grow when the transition is made to complete cost accounting. Previously, the material incentive fund was reduced by 3 percent and only by 3 percent for every percent of underfulfillment of the delivery plan since the payment of the fine for shortfalls in deliveries at a time when the free profit remainder existed did not directly influence this fund or other economic incentive funds. Under cost accounting, this will entail the same 3 percent loss of the material incentive fund plus the reduction of all 3 funds, including the material incentive fund, by the sum of the fine that is paid.

The procedure for charging sanctions for unlawful decisions personally made by management, in particular, for skipping products without allocations [fondy], also contradicts cost accounting. In this case, it is necessary to take administrative measures against the manager himself and not against the work collective.

Another source of concern is the fact that interrelations between enterprises and higher departments, as well as interrelations of the ministry with USSR Gosplan and the USSR Ministry of Finance and other departments have not undergone serious change. It is specifically in this sphere that there has not been the proper restructuring and, what is more, the old norms and rules have been a heavy load on the shoulders of "independent, cost accounting" enterprises.

[I. A. BAKALEYNIK] Planning and management at the level of enterprises and associations (the basic link) is the most important sector of restructuring. The depth and complexity of the problems arising here must not be underestimated because the need is to break with approaches that have formed over the decades to the solution of current and long-term problems, the system of priorities, the placement of forces, and authority in the structure of management. Historically, the production and technical services have had priority over economic services and there has been a kind of technocratic bias in the decision-making process. It is also reflected in the structure of management: a chief engineer has the status of first deputy manager; the following places in the nomenklatura belong to the deputy manager for commercial work and the deputy manager for production. In the decision-making process, management is primarily oriented toward indicators of the production program (units, volume) and the technical level of production (the lowering of expenditure norms, release of manpower, assimilation of new products, etc.).

The transition to self-financing advances to the forefront questions pertaining to profitability, profit, the comparison of outputs and inputs, the economic substantiation of management decisions, in-depth economic critiquing of current and long-range plans, including production plans, plans for the development of capacities, technical retooling, and product modernization. There is corresponding growth of the role of the economic service of enterprises and associations. Its place in the organizational structure of management is changing. There must also be change in the approach of other functional services to the choice of management tactics and strategy. By no means all personnel in the basic link are ready for such restructuring of

priorities, for the shift in emphasis. Transitional processes can be accelerated by making changes in the standard structures of management and by giving the deputy manager for economics and finance the status of first deputy manager.

The discussion of the restructuring of planning has shown that it confronts economic science and planning practice with a number of difficult problems, the solution of which is associated with the intensification of economic work at all levels of the national economy. The principal goal of such work is to promote in every way the increased effectiveness of the economy and the introduction of the principles of complete cost accounting, self-financing and self-supply of associations and enterprises.

The editors plan to continue the discussion of problems of planning and proposals on improving it.

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SIGNIFICANCE OF SMALL ENTERPRISES IN ECONOMY EXAMINED

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[Article by M. Gevorkyan, doctor of economic sciences, and V. Avetisyan, candidate of economic sciences, Yerevan: "Small Enterprises in the Economy"]

[Text] The article by I. Golovin and A. Pevzner entitled "Small Enterprises in the System for Management of Social Production" (PLANOVYE KHOZYAYSTVO, No 11, 1986) touches upon questions relevant to approximately half of all production units in the industrial sector and to a majority of production units in other sectors of the economy. In our opinion the article rightly sheds light on many aspects of the position of small enterprises and on the need for changes in the policy with regard to them. At the same time a number of exceedingly important points were not covered. Moreover, the article referred to (and it is not alone) displays an organizational-managerial and technical-and-economic "bias" in the consideration of many issues.

As a rule articles on small enterprises contain attempts to offer specific technological and organizational criteria by which the sphere of their activity would presumably be "configured" and their operation managed. Whatever the potential usefulness of such criteria, it cannot be overlooked that they are extremely rigid (for example, they may "not allow" particular units into the sphere under consideration or may have the effect that their management will involve regulations which are too detailed, and so on).

The article referred to examines a number of specific directions for implementing the general principle of increasing the independence of enterprises (limitation of the system of indicators contained in the plan and the shaping of the plan on the basis of economic contracts, the credit system for supplying capital investments, the collective contract, and the residual principle for calculating the resources available for remuneration, etc.). But the authors strive to retain "strong levers for exerting pressure" on the enterprise by the superior authority even to such questions as personnel selection, raw materials supply, guaranteeing bank credit, and so on.

But even now it is becoming obvious that the management of small enterprises must be oriented toward more general economic principles which only sketch out areas in which their development is necessary and the tasks which they must perform in the economy. It has to be stressed that in the future large-scale

economic organizations, large plants and associations--will be the basis for economic development. At the same time scientific-technical progress has developed to such an extent and complicated to such a degree the system of requirements imposed on production and the conditions for running production, that greater participation of small production units is required to meet them.

Because of the comparative rigidity in organizational structures, the lack of sufficient flexibility in the production program, the slim dependence on the consumer, and a number of other reasons, large production units do not have sufficient incentives to pursue innovation either in product development, especially consumer goods, or in the organizational forms of production and so on, and that is impeding and slowing down the application of the advances of scientific-technical progress. At the same time, before many new products are put into volume production, they must be tested to judge the existence and size of demand and matched against the requirements of specific consumers (produced, that is, in small experimental lots). Small enterprises are more responsive in organizing and halting production of particular products, which is why they are able to be a "testing ground" for trying out the advances of scientific-technical progress.

As a specific organizational form of production, small enterprises are called upon to take an active part in solving a number of economic and social problems both for the country as a whole and also for individual regions. For instance, among the most important problems for regions with a labor surplus is to increase the degree of participation of labor resources in social production. A relatively long time will still be needed to solve this problem. The basic economic problems related to this issue are that the people who are not employed in production are scattered over a large number of small settlements, they are not sufficiently mobile, and creation of most types of jobs in large-scale production is highly capital intensive. Small enterprises, especially in local industry, light industry, and the food industry, represent one of the real opportunities for solving this difficult problem. As a rule they are distinguished by a low capital and low fixed capital requirement at the time of creation, but they are capable of manufacturing a more labor-intensive product. Moreover, depending on the particular type of production, they use both highly skilled and also semiskilled labor. The products produced by small enterprises have considerable importance in meeting the demand of the public in a particular locality. We cannot but mention the broad potential for using the cottage industry pattern in local industry, for example, which also makes it possible to involve more fully the population of pensionable age.

Small enterprises can take over a sizable portion of the production of small production runs. The reason is that the use of large equipment for these purposes requires numerous readjustments, and that sharply reduces the efficiency of its operation. That is why in our view small-series production has in all the advanced countries taken over more than half of the entire output in the manufacturing industry, and this share is continuing to rise. As a matter of fact, it is a question of the increasing degree of specialization of production in the economy.

For decades we have had a situation in our economy where industrial enterprises have as a rule endeavored to encompass a maximum number of production operations providing components and services for their end product. This actually makes it easier for them to produce the end product (they are afraid of interruptions of supply), but for the national economy as a whole it means a drop in economic efficiency. The transition to the intensive development strategy requires considerably more intensive specialization, not only specialization in the making of components, but also specialization based on similarity of process. What must be specialized is the production of the product that is the intermediate product from the standpoint of the national economy; often this is a nonstandard and specialized product produced in small quantities. Jigs, tools, fixtures, and spare parts have a particular place here. Indeed the greatest problems seem to be related to furnishing them. Small enterprises might play an important role in resolving these difficulties.

The experience of a number of countries indicates the rather high efficiency of the specialization of small separate enterprises even in performing confined groups of processing operations necessary to the manufacture of both the end product and also the intermediate product (preparing raw materials in wood manufacturing, the building materials industry, the food industry, the meat and dairy industry, light industry, etc.; the finishing of rolled products in metallurgy, and so on). In spite of their separateness, they become an organic part and complement of the large production systems. In the production of consumer goods in small lots products must be produced in a stylish assortment, demand is episodic, and certain groups of the public with specific requirements have to be satisfied. Meeting such needs with large enterprises is difficult and ineffective.

Another economic problem which small enterprises can solve is the shortage of many simple consumer goods which are not complicated to make (articles of clothing, decorative items and household products, simple agricultural and home-repair appliances and implements, etc.). Many types of spare parts for sophisticated machines and devices produced by large industrial enterprises are also scarce. At the present time meeting the demand of the public and production organizations for these products, because their production is excessively centralized, forces planning authorities to envisage considerable shipments of them from region to region and from one oblast to another. Their load on the transportation system could be substantially reduced if the question were settled of producing them locally.

At present the principal way of overcoming the shortage of these product groups is to assign their production or increased output to large enterprises, where special subdivisions are set up for this purpose (consumer goods shops and sections, and so on). What this does is to expand more and more the product mix of the large enterprises, which do not always have the real capability for efficiently managing production of such an extensive list of products. In the present stage this policy is to some extent necessary, but we cannot fail to see that it is holding back the specialization of production in the economy. That is why products other than the principal product are produced at low efficiency, and their quality is poor, enterprises producing products for production and technical purposes do not have sufficient

motivation to manufacture consumer goods. But the production of products which are simple, but necessary and whose demand is predominantly local, is the most important part of the product mix for small specialized enterprises. They will have a direct motivation to effectively meet the demand for precisely these products.

The creation of small enterprises is a realistic way of solving the problems of equipment repair as well. But they need to be equipped for this purpose with up-to-date technology in their respective field and oriented toward repairing the types of equipment which are most widespread in the region. Along with enterprises for manufacturing industrial tools, jigs, and fixtures of similar size, they must as a rule be interdepartmental (subordinate to oblast soviets and to union-republic departments and ministries) and they must perform intersector tasks.

Small-scale enterprises must also be involved in solving an acute problem like utilization of production waste and secondary raw materials. At large enterprises the recycling of most waste does not "fit in," and the process of producing them creates additional difficulties. Yet for the small enterprise use of waste as a raw material can be the basis of the production process, which from the standpoint of the economy as a whole is advantageous: additional products are produced, and the harmful effect on the environment is reduced (harmful emissions into the atmosphere and discharge into water are reduced, and less good land is taken away from agriculture). Science and practical experience have found a large number of new possibilities (processes) for utilizing secondary raw materials and the waste from highly diverse production operations. The effort needs to be stepped up to rapidly create on this basis up-to-date and highly efficient types of the relevant equipment which meet the most progressive level of scientific-technical progress.

Compared with the large organization, the small enterprise is more dependent upon the consumer, upon demand for the product it is producing. It objectively possesses greater potential for flexible operation, for rapidly restructuring production to meet changing demand. This is important to increasing the role of the consumer and to reducing (and eliminating) the production of consumer goods which are not in demand (including those which are outdated) and substandard products for production and technical purposes.

Finally, expanding the network of small enterprises makes it possible to carry out the party's and government's orientation toward priority development of industry in small cities and large villages predominantly in areas which are now agricultural, toward halting the quantitative growth of the large cities, and toward maximum convergence of the level of socioeconomic development of all settlements. In recent years provision has been made for using the capabilities of small enterprises to develop small cities and villages in RSFSR (especially in the Nonchernozem Zone) and the mountain and foothills regions of ArSSR and GSSR, etc.

But at present there are many difficulties in developing the network of small enterprises, especially with respect to their optimum location. Complications are also occurring concerning the working and living conditions of those

employed because small enterprises are located as a rule in small settlements where there is no highly developed production infrastructure or infrastructure for social welfare and consumer services. In addition, the efficiency of their operation is not always high, which is why their own abilities to improve the living and working conditions of the workers are not great. But even in large cities where the infrastructural and construction services are highly developed, problems arise for them in obtaining resources from the production development fund and the fund for social welfare and cultural programs and housing construction.

Many problems of small production units, especially those which are newly built, have to do with the low level of qualifications of the labor force, its low level of industrial sophistication, and poor organization of the vocational and technical training of personnel. In most cases they have to be trained right on the job. Moreover, usually the instructors themselves are not highly skilled craftsmen. The low skills of most of those employed and the poor organization of production are indicated by the fact that by and large the share of small affiliates in the total amount of an association's penalties for substandard products and their return exceeds by a factor of 2 or more their share in the volume of production. Quite a few personnel problems also exist in small enterprises located in large cities. This is related above all to the lower category of remuneration of labor and the ease of finding jobs at a large enterprise, which along with the complications we have mentioned in improving the living and working conditions of personnel makes it difficult to keep highly qualified specialists in the collective.

Many small enterprises also have low efficiency because their equipment is behind the times. It is not uncommon at such enterprises to find equipment that has been in service for more than half a century; approximately one-third of the equipment is almost entirely worn out. Large enterprises as a whole surpass them several times over in the relation of capital to labor and the relation of output to capital (by a factor of 2-4, and sometimes even tenfold). As a consequence the share of unskilled manual labor is substantially higher, productivity is lower, and specialization is not intensive. Recently there has been an evident trend toward a gradual expansion of the product mix planned for small enterprises. Indeed even on their own they are trying to organize the production of additional parts, workpieces, and so on, necessary for the production of their end product; the same applies to the operations of serving production and repairing equipment. The economic efficiency and quality of this additional production and self-service are, of course, low.

Complications in the activity of small enterprises result from the fact that the authorities managing the economy at all levels did not for a long time pay attention to their needs, and they did not have the help that they needed under the complicated conditions to be able to overcome their difficulties. A policy has to be conducted that would make it possible to turn the sphere of small enterprises into a highly developed sector of the economy more rapidly and to use their potential for economic development as a whole.

The network of small enterprises must develop along several lines. First of all, work needs to be done on the question of the size, production

specialization, and location of new small enterprises. They should mainly be set up outside large cities. There is moreover a need to take into account the specific characteristics of the work habits that have traditionally formed in the population. A number of additional steps should be taken toward prior training of personnel, and as a rule untraditional and mobile forms of training should be used (there is a need for specialized examination of these forms).

The valuable experience that has been gained in recent years in a number of the country's regions should be disseminated as widely as possible. The organizational and economic basis of the experiment in the city of Poti was subordinating on certain matters all enterprises in the area to the cost-accounting association set up in association with the city soviet; its revenues are made up of deductions from their profit and are committed to the development of local industry, both infrastructural and also production projects. In addition, thanks to the centralization of the corresponding resources of the subordinate enterprises, the association has built up a rather sizable joint production development fund. One of the association's tasks is to furnish aid to enterprises located in the city of Poti (mainly local industry) in reconstruction and creation of additional production units so as to afford maximum utilization of local resources, secondary raw materials, and waste and on that basis to increase the output of consumer goods and consumer services. For instance, several intersector facilities (a plant for production of processing jigs and fixtures and the like) have been built and put into operation using the resources of all the city enterprises (including those under union jurisdiction).

In its activity the association is paying paramount attention to maximum utilization of local secondary raw materials. But if the use of waste and secondary raw materials is to be efficient (profitable), then as a rule it must be based on the most recent advances of scientific-technical progress. Whenever necessary, therefore, contracts are concluded with scientific organizations to develop new processes for utilizing specific types of secondary raw materials and waste. A catalogue is kept of the waste of all enterprises in the city. A combine is being built to produce consumer goods from secondary raw materials. Departmental barriers in this regard are being overcome with the help of the local soviet. As a result of this activity enterprises in the city of Poti increased the output of products produced from waste (that is, without using full-fledged primary raw materials) 15-fold during the years of the last 5-year planning period. The planned growth rate of production of consumer goods has been exceeded many times over. The dissemination of this know-how substantially increases the capabilities of small enterprises. Local territorial cost-accounting associations could provide the necessary assistance and guide the activity of such enterprises. It is obvious that the configuration of many of them working with outdated processes and worn-out equipment must be radically altered. It obviously would make sense to transfer some of the small production units which are now independent and are manufacturing intermediate products to production associations. This would intensify their specialization and result in a direct satisfaction of the needs of the large economic systems.

But the organizational patterns of subordination of small enterprises should not be restricted. Depending on the feasibility from the standpoint of the national economy, there is a need to examine diverse possibilities here. For instance, a substantial portion of small enterprises in the machinebuilding field could be "attached" to scientific institutes as their production "extension." They should in this connection be given the right to fill orders of outside organizations as well. Many small enterprises could obviously be made subordinate to administrations of local and light industry as well as various nonindustrial authorities (trade, food service, cooperative administrations, etc.).

When small new enterprises are created or existing ones are modernized, rebuilt, expanded, or reconfigured as to their output, up-to-date equipment must be installed. That means that some of the efforts of project planning organizations must go into developing and improving the various types of machine tools, devices, instruments, and processes used at small enterprises. Provision must be made for large-scale manufacturing of highly efficient equipment for processing secondary raw materials and waste.

Many of the advantages of small enterprises we have enumerated may be fully realized only if certain organizational and economic conditions are brought about. Above all, in our view, their rights have to be broadened in selection of the mix of products they are going to produce in the context of public demand, and they should be independent in organizing new production operations and retooling. This means both that steps must be taken to increase the funds they have for development of production and also that the small units must be able to combine their efforts in using those funds. The spread of local and territorial cost-accounting associations is one of the effective means of speeding up the technical modernization of small enterprises. These organizations also must have greater independence in establishing the most suitable operating schedule and also, another thing of extreme importance, in the matter of work incentives.

Immense capabilities are now being opened up in the activity of small enterprises, especially in connection with adoption of the Law on the Socialist Enterprise and Law on Self-Employment. Under these conditions, in our opinion, there must be a change in the very approach to their existence and to their operation. Expansion of independence in planning must be accompanied by greater economic responsibility in the form of self-support and self-financing of their development.

The principle that they should exist only so long as they are able to operate profitably and on the conditions of self-financing should be extended to small enterprises. The organization of cooperative enterprises should be based on these principles, and they will all be included among small enterprises.

We deem it necessary to support those economists (I. Golovin and A. Pevzner in particular) who proposed the collective contract for small enterprises as the basic form of internal organization, the residual principle for the formation of the wage fund and other forms that strengthen economic responsibility. At the same time it would seem that we should not preserve those features of the economic mechanism which make it possible for individual enterprises to

continue "to live at the expense of others." For instance, it is hardly advisable for a higher level organization to provide them a guarantee when bank credit is being taken. Aside from affording an excessive benefit, as a practical matter granting such guarantees would not make it possible to avoid the factors of bureaucracy, string-pulling, and time losses, which could cause damage that would be extremely great for a small unit. Extending credit secured by their own property would correspond better to the economic principles of management. The same principle of guaranteeing repayment should also be applied to all those resources which the founder puts up in creating a small enterprise.

The intersector character of the activity of small enterprises with respect to the existence of demand in the economy for their products (service) needs to be guaranteed. It is obviously unfeasible, then, to be too rigid in assigning the configuration of the specialization which these enterprises will have, and it is worth leaving it open to each one of them to perform operations in types of activity which border upon its basic configuration.

This will guarantee, should the small enterprise become independent (through a contractual arrangement), shaping its own production plan and seeking out its own physical resources following the same procedure.

Small enterprises are also small consumers of raw materials, supplies, and equipment. In economic life they end up in a worse position than large ones. Developing wholesale trade and means of production would help to change the situation. For a start, for every type of resource that passes through the system of USSR Gosnab, a certain share of its total quantity that is delivered to small enterprises could be set apart, and within that amount supply to those production units through wholesale trade would be built up in the very near future. In the sphere of small economic organizations there also is a need to do testing of measures to tighten penalties for breaches of the terms and conditions of deliveries--preferably all the way to reimbursement of the full size of the loss inflicted on the consumer.

If small enterprises are to yield appreciable results in the economy, it is advisable in our view for newly organized enterprises to be granted financial benefits in the first 2 years of their existence both with respect to payments into the state budget and also on the question of repayment of bank credit. There should also be a change in the procedure for setting prices of the products (services) of these enterprises, and pricing in the sphere they make up should be more flexible and responsive and based on negotiation (in agreement with their trading partners).

Small production units, which possess meager resources, are in greater need of combined efforts than large ones. Aside from the spread of territorial cost-accounting associations, it would be desirable here to work out a procedure for organizing associations of a new type--contract associations (on a voluntary basis). The enterprises making up such an association would remain juridically independent, but their relationships could be structured on the principles of full economic motivation and liability. Such associations would be created for a specified period of time, say, for joint construction, for

supply and sales, to organize and finance the production of new products, to obtain certain services and information, etc.

An important role can be played in the activity of small enterprises by timely information on new products, on the growing or decreasing scarcity of particular products they produce, and on nationwide and foreign experience. There is also a need for exhibitions and the publication of catalogues of their products, to produce periodical bulletins on matters pertaining to their activity, and so on.

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EXPERIENCE WITH NEW TECHNOLOGY ASSIMILATION WEIGHED

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[Article by N. Belous, general director, "Ukrelektromash" Production Association; and T. Troitskaya, chief engineer, Informelektro: "What the Experience of New Technology Assimilation Shows"]

[Text]--Kharkov-Moscow--The "Ukrelektromash" Production Association is the country's largest supplier of electric motors under 100 kilovolts. It incorporates the Kharkov Electrical Equipment Plant, the Poltava "Elektromotor" Plant, the Dnepropetrovsk Electromechanical Plant, and a SKB [special design office]. Their product mix numbers several thousand items. The association produces electric motors for cold climate, multiple-speed, high-stroke, high-frequency, geared, torque motors, etc. It supplies large lots of motors for agriculture, NC machine tools, excavation equipment, textiles and paper making machinery, elevators, drilling rigs, compressors, and motors for other mechanisms. Large-scale cooperation has been established between "Ukrelektromash" and enterprises in ferrous and nonferrous metallurgy, machine tool construction, the chemical and pulp-paper industry, from which it receives more than a thousand different supplies and components.

The task of the association's technical policy is to give customers the necessary number of electric motors corresponding to the world standards and at the same time to secure the maximum economic effect in their manufacture and use.

Improvement of the parameters of electric motors produces a major national economic effect. For example, raising efficiency [KPD] by just one percent conserves at least 2-2.5 billion kilowatt/hours of electric power a year throughout the national economy. Reducing the mass of a motor makes it possible to conserve thousands of tons of rolled metal on a national scale. And finally one should not forget about the great summary labor-intensiveness of the production of this product which advances the problem of technological improvement to the forefront. The modernization of each new design and the reduction of the dimensions of the motors inevitably entail an increase in the complexity of the technology and hence necessitate the continuous technical retooling of production.

All this has led to an integrated, interconnected approach to scientific-technical, economic and production problems upon the establishment of direct contacts with smezhniki [factories producing parts for use by another]. It was specifically this approach that enabled the association's collective to almost completely modernize its product mix under the 11th Five-Year Plan and to be the first in the nation to commence series production of the new AIR electric motors developed within the framework of the international "Interelektro" organization with the active participation of specialists of the plant's SKB. On the whole, these motors are on a par with the world technical level and are superior to the best foreign analogues with respect to individual parameters, including KPD and material-intensiveness. The economic effect of their introduction is 40-50 percent of the motor's wholesale price.

We see one of the main untapped reserves for acceleration to lie in the organization of business contacts with smezhniki, especially with the metallurgists. Thus, the creative interaction of specialists in our association and the Cherepovetskiy Metallurgical Plant was instrumental in making the AIR motors highly efficient. Back in 1983, a contract was concluded on the development of a new electrical steel, the quality of which was entirely in keeping with the demands of the electric machinery builders while the technology of production corresponded to the metallurgists' potential. Together they drafted an integrated plan embracing the entire technological cycle--from the development of an optimal steel production technology to the production of the finished motor. As a result, isotropic electrical steel, whose properties proved to be better than foreign analogues, was assimilated in less than 2 years. The use of this steel made it possible to simplify the technology for producing electric motors, to improve their specific indicators, to reduce the expenditure of steel by 10 percent and copper by 3 percent. This eliminated the need for such a costly and energy-intensive process as the high-temperature annealing of steel billets.

Cooperation with the All-Union Scientific Research Institute of Electric Machine Building (VNIPTIEM) in Vladimir proved fruitful. As a result of this cooperation, specialists belonging to the association's SKB developed so-called thyratron electric motors that constitute a new generation of technology. The use of microprocessors improved their regulatory properties as well as their energy and operational characteristics. This product is in particularly high demand among machine tool builders. It has already been handed over to the Dnepropetrovsk Electromechanical Plant for assimilation.

Close interaction with the All-Union Scientific Research Institute of Electric Machine Building Technology (VNIITelektromash) over a 12-year period was instrumental in the association's technical retooling and in its being supplied with highly efficient production equipment. During this period, more than 200 units of special equipment and scores of progressive technological processes that raised labor productivity in the most labor-intensive assembly and other operations 2-3-fold were introduced at the association's plants. Production became appreciably more sophisticated and manual labor was reduced to a minimum and in some cases eliminated altogether. The association and VNIITelektromash developed a large automated complex for producing the most labor-intensive assembly of the electric motor--the stator, thereby making it possible to release dozens of skilled workers and to economize 200,000 rubles

a year. The introduction of the automated complex at other electric machine building enterprises will release approximately 1500 workers. The new equipment will be in pilot production at the institute, which will mean a great saving of time in its assimilation. While in the past, for example, the assimilation of an automatic line took at least 5 years, with the interaction of scientific and production collectives this process has been speeded up almost 2.5-fold.

The introduction of new production equipment, including the more sophisticated aggregate machine tools, robotic complexes and other types of equipment must be preceded by precise economic calculation, by comprehensive analysis, by its reciprocal coordination with other links in the technological production chain. It is for this reason that institute and plant specialists work together during the development stage and that a special task brigade, that includes the most experienced workers and brigade leaders, is created during the assimilation period.

Work on the introduction of highly efficient equipment, mechanized lines, NC machine tools, and industrial robots is continuing. The degree of mechanization of loading-unloading operations has reached 83 percent. In 1986 alone, more than 600 tons of rolled ferrous and nonferrous metal were economized in excess of the plan.

The association is expanding consumer goods production. Economized materials are used to produce centrifugal water well pumps, electric sharpeners, and saw sharpeners that are in high demand in rural areas. Their production now accounts for 10 percent of the association's total output.

Construction of a new consumer goods shop is complete. Highly efficient equipment not requiring additional manpower has been installed here just as in basic production. Automatic conveyer lines have replaced almost all manual operations--from feeding the billets to testing the finished product. Today 96 kopecks' worth of goods are produced for every ruble of the wage fund. The assimilation of new types of products and the increase in the volume of their production will make it possible to raise this indicator to 1 ruble .05 kopecks under the current five-year plan.

It should also be noted that labor productivity in the association will exceed capital per worker specifically as a result of technical retooling. This will in part be due not only to the shortening of the lead time for new equipment and the time required to bring it up to its maximum but also by the careful consideration of productive fixed capital and the elimination of obsolete equipment. The output-capital ratio is negatively affected by above-norm equipment. Therefore, all production subdivisions in the association have adopted and are implementing measures to reduce it and have raised the responsibility of collective managers, specialists and all engineering services for above-norm inventories. As a result of the effort that has been made, the equipment shift coefficient has been raised to 1.66 and the coefficient of production capacity utilization is now 1.92.

Based on the results of the first year of the 12th Five-Year Plan, the volume of production has increased by 6.7 percent, labor productivity has been raised

by 11.8 percent, and almost 3 million rubles' worth of output have been sold in excess of the plan; the share of goods corresponding to the world level was 80.9 percent of the overall volume of production. Such indicators are the result of the intensification of economic levers in the management of the collective's entire activity. The association has been successful in totally converting shops and sectors to khozraschet, in introducing elements of khozraschet in brigades operating under a single contract. The brigade form presently embraces 78 percent of all personnel and 93 percent are paid for the end result.

Much attention is also devoted to progressive forms of wages and work incentives. This primarily applies to design and technological services. In 1986, 177 designers and technologists received salary increases. As a result of the release of more than 20 staff units, approximately 4000 rubles in the wage fund was economized and 430 engineering-technical personnel received a salary increase for their high qualifications.

With the transition to the new wage terms, all structural subdivisions in the association received an approved wage fund within the limits of which wage supplements could be made. This has been widely discussed in work collectives. Each shop in basic and auxiliary production has a 1987 target for output volume, for labor productivity, for work force reduction, and for higher output and service norms. The measures that are being taken are primarily directed toward establishing a strict dependence between wages and the quantity and quality of work everywhere.

The previously adopted, approximately 50 percent share of the basic wage scale in the average wage did not motivate workers to upgrade their skills. It is now possible to increase the share of the basic wage scale in average monthly pay to 70-75 percent. High productivity, high product quality, the conservation of material resources, and the timely fulfillment of export assignments are the basic criteria for supplements to wage rates. The system of economic incentives for work collectives is also being improved. Foremen have new work incentives. They receive supplements to their salaries depending on the performance of a sector (the performance of a production program with a given mix; production of goods in accordance with the demands of production documentation; the growth of labor productivity). The absence of overruns of the wage fund is also taken into account.

The brigade's bonuses are also different under the state acceptance system: 10 percent for the fulfillment of the state plan for the given mix and 30 percent for the production of goods that are accepted the first time they are submitted. At the same time, if less than 97 percent of the product are not accepted the first time they are submitted, a bonus is not paid. If the technological process is violated, the bonus is reduced by 50 percent for each warning and if a product does not correspond to the design documentation, the brigade is stripped of its bonus entirely.

The statute on the payment of bonuses to brigades and individual workers entitled to use the brigade stamp or a personal stamp took effect on 1 January 1987. Thus, for observing oversight norms in accordance with designs, technical specifications and the economic process, a brigade receives

additionally seven percent of the total piece-rate wage with distribution for the labor participation coefficient while a worker receives seven percent of his basic wage rate for time actually worked. Any deviation from the plan results in a brigade or worker being deprived of the bonus until such time as the violation is corrected. Bonuses from the material incentive fund are increased by 15 percent for brigade collectives that have their own stamp and that have worked flawlessly for a year. Those guilty of flawed output, regardless of where and when it is discovered (in the course of state acceptance or by the customer) are deprived of all their bonuses and bear liability in accordance with existing legislation.

At the same time, in our view these measures are not enough to overcome tendencies toward wage leveling, to say nothing of increasing the motivation of work collectives to perform highly productive and high quality work. Certain restrictions on the use of the wage fund, i.e., the introduction of a norm approved by a higher organization for the remuneration of the labor of managerial, engineering-technical personnel and white-collar workers also make themselves felt. Unfortunately, the Ministry of the Electrical Equipment Industry has already approved such a norm that will retard the introduction of automated production systems, robotic complexes, the creation of new generations of equipment using microprocessors, etc. It appears that the enterprise itself must obtain the right to determine the wage fund for all categories of personnel since only it knows how many and what kind of engineering-technical personnel are required to improve the enterprise's technical policy.

State acceptance has become a serious examination in the improvement of product quality. The association prepared for it in good time by developing the procedure for submitting parts, assemblies and motors to be assembled; by holding talks with foremen and workers; and by ensuring the coordinated activity of state acceptance agencies and the plant collective. The workers correctly understood the tasks placed before them and their higher responsibility for product quality. Nevertheless, in January 1987, when the careful observance of technology became everyday practice in shops, the state acceptance commission accepted only 67 percent of the products the first time they were submitted.

The question naturally arises: what is the reason for such a high percentage of poor quality output? The first is obsolete equipment that still has to be used to produce a certain amount of the output. Workers are painfully aware of the difficulty of producing quality products on obsolete equipment when they have to introduce additional technological operations and must invest more effort to perform the same work they performed easily prior to the introduction of state acceptance. Nevertheless, for all their diligence, the January sales plan was fulfilled by only 80 percent. The situation improved somewhat in the first quarter of 1987 (the production plan was fulfilled by 90.9 percent; the sales plan--by 93.0 percent; 91 percent of the goods were accepted the first time submitted to state acceptance) even though problems pertaining to the technical retrofitting of production await their solution. Experience shows that existing technical retrofitting resources cannot by any means always be realized. Given the existing procedure for filing orders for new equipment, various kinds of coordination take months and even years, the

enterprise does not know what it will receive and when it will receive it, to say nothing of the fact that less than 60 percent of the orders are as a rule satisfied. What is more, contractor organizations are not motivated to perform a certain volume of construction and installation work. What is more, there is not enough hoist-transport equipment--cranes, trucks, bulldozers--so necessary for the accelerated rate of technical retooling.

The second reason is delays in the delivery of components. In January, Vologodskiy GPZ-23, where state acceptance was carried out, should have supplied our association with 85,000 more bearings than it did. In our view, state acceptance should have been organized simultaneously or else should have started at those that produce raw materials, supplies, semimanufactured goods, and components. Possibly state acceptance should have been instituted in stages so that it would encompass all types of products produced by an enterprise in a certain period, for example, during a five-year plan. For all this, the educational significance of state acceptance is enormous: workers realize that now they must produce only products that meet the customer's demands. Therein lies the highest sense and moral norm of the activity of any work collective.

The work of associations under the conditions of state acceptance of products once again confirmed the need for the all-round development of direct long-term relations with suppliers and at the same time raised the question of increasing their responsibility for the fulfillment of contractual obligations and improving the system of material-technical supply. Obviously, the ministry must give more thought to allocations of material resources. Accordingly, when matching customers to suppliers, consideration should be given first of all to the territorial principle in order to reduce distances between enterprises--suppliers and customers--to the maximum. The given allocations should be based on direct, long-term relations for the entire five-year plan without advances with the condition that the production plan be no lower than the level of the preceding year. Since direct economic relations must be the basis for formulating production and delivery plans, it is essential that annual plans be developed and approved at the enterprise.

Today, the economic mechanism is being improved so that it will secure the optimal work routine of enterprises under the conditions of self-financing and self-support [samookupayemost]. Nevertheless, such a key question as the pricing of new machinery remains unresolved. Price, as is known, is the basic instrument for exerting an economic influence on the introduction of new technology: the price of a product determines whether an enterprise will lose or make a profit. But in a number of cases the USSR State Committee for Prices takes an abstract approach to the concept "new technology" and does not fully take into account socially necessary expenditures on its development and introduction. The assimilation of the AIR series of electric motors in which the KPD is raised, material-intensiveness of design is reduced, and noise levels are substantially lowered, can serve as an example. Thereby the key ecological problem is resolved, thereby providing the basis for classifying these motors under the heading of technology of a new generation. What is more, their production was of considerable cost to the association: new, low-noise bearings were 3-5 times more expensive than the old ones, the price of

new steel was increased by 10 percent, insulation--by 15 percent, while the price of the motor remained the same.

It would seem that the association, having developed a product that was highly competitive in the world market, would be entitled to count on a 30 percent markup in its wholesale price. However, the USSR State Committee for Prices approved a markup of only 8.3 percent for the entire series of motors. Of course the lack of coordination of activities between the USSR State Committee for Prices and the State Committee for Science and Technology and their different approaches to the definition of "new-generation technology" made themselves known here. The mechanism for pricing the association's major products did not have the proper stimulating effect on the work collectives.

Obviously, we should more precisely define the rights and obligations of the enterprise in the area of pricing, thereby eliminating possibilities for the cost-is-no-object approach. What is more, we must more precisely establish the range of socially necessary expenditures of labor associated with the solution of important ecological and social problems that do not always fit within conventional schemes for calculating the economic effect.

The existing pricing system also retards the introduction of new technology by virtue of its bureaucratism: the coordination and approval of the wholesale price of an experimental lot (technical specifications with index "0") go through at least 7 stages--from customer to ministries, on which a great deal of time is spent. The process can be accelerated if we do not compile technical specifications but confine ourselves to the description of a product based on design documentation and if we coordinate the price of the experimental lot solely at the level of the enterprise--manufacturer and customer. In order to increase the substantiation of contract prices, we should introduce a system of indicators that can be used to evaluate (for example, on a point scale) the technical level and operating qualities of the product.

Economic management methods that have received priority under the restructuring program must also reflect progressive forms of planning. The planning mechanism and in particular the work of the enterprise, as long as it is still evaluated on the basis of volume of (gross) output also requires improvement from this point of view. There is a need for norms and economic levers, for the work of enterprises more precisely oriented toward qualitative indicators, toward the output that is needed by a specific customer.

The system for planning the financial activity of production associations also needs to be revised. It is regulated by higher bodies to such a degree that everything is scheduled: how much an enterprise can expend from given sources for various purposes. The final financial result of the enterprise's production activity must be evaluated in terms of the volume of its profits. In our view, it is essential to establish stable long-term norms governing deductions from profits to the budget and to the ministry. The stability of norms is the basis of the successful work of any production association (enterprise) under the conditions of self-financing and self-support.

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FLAWS, POSSIBLE IMPROVEMENTS IN MATERIALS RECYCLING VIEWED

Moscow PLANOVYE KHOZYAYSTVO in Russian No 6, Jun 87 pp 95-100

[Article by N. Pirogov, department deputy director of USSR Gosplan: "Recycled Resources and Effectiveness"]

[Text] New methodology and organization for planning the utilization of secondary resources. Problem of developing general indexes to reflect the inclusion of waste products in national economic turnover. Proposal on economic stimulation to expand the recycling of secondary materials.

The inclusion of secondary materials in recycling is a large reserve for economizing on raw materials and stock and is becoming more and more important. In 1986 in the country raw materials and stock worth about 13 billion rubles were saved as a result of the use of secondary materials.

Centralized planning with regard to the utilization of secondary materials, which has been carried out on a national scale since 1981, has had a determining influence on increasing the volume of secondary materials that have been put into national economic turnover. During the years of the 11th Five-Year Plan growth in the volume of recycling of the most important types of secondary materials surpassed that of extracting the corresponding types of raw materials; there was a significant increase in the role of waste products in satisfying industry's growing need for material resources.

Under new management conditions, planning involving the use of secondary resources requires radical changes. At the time of the development of the section in the draft of the 1987 State Plan on utilizing secondary resources there was an increasing tendency toward yearly growth in number of indexes, as well as in the position of secondary resources, according to which tasks were established centrally for the growing number of ministries and departments. Thus, whereas for 1981 tasks related to the utilization of 23 types of secondary materials were confirmed for 25 ministries and departments, for 1987 these figures grew to 62 and 75 respectively. The aforementioned section of the plan, according to the nomenclature established by the USSR Council of Ministers and USSR Gosplan, included tasks on the procurement, on the use and delivery of secondary materials, on the manufacture of products from these secondary materials, on the introduction into operation of production capacities for processing and recycling waste products in ministries-customers

as well as in ministries which carry out building. The plan also calls for an introduction into operation of state capital investments allocated for these purposes. At the same time certain conflicts were defined between increasing the number of indexes within this sphere and curtailing the total number of indexes that must be confirmed by enterprises and associations of higher-standing organs.

As we know, on the list of the basic indexes, limits and economic norms for enterprises and ministries that have made the transition to the new management conditions no indicators on secondary raw materials are included. In connection with this various proposals were presented on planning the use of secondary resources under existing conditions. One proposal is to avoid making any assignments to ministries and departments as concerns the utilization of secondary raw materials, but to take these materials into account when developing other sections of the state plan. The given proposal was motivated by the fact that the drawing in of wastes into national economic turnover is not a production goal but only one of the ways to expand resource potential and to increase work effectiveness.

Without denying a certain logic in these assertions, we feel it would be an error to reject centralized planning of tasks dealing with the use of wastes simply on this basis. The fact is that the inclusion in turnover of industrial and consumer waste is not only an important economic but great social problem as well. The increase in the use of secondary raw materials not only allows us to successfully deal with problems related to economizing on primary raw materials and stock but also has a direct influence on conservation of the natural environment and teaches people to be sparing, which in the final analysis is manifested in the achievement of specific economic results.

Without exaggerating the importance of the problem of utilizing industrial and consumer waste we can confirm that the degree to which this problem is dealt with in the enterprise, branch, individual region, in everyday life and in the entire national economy is a type of indicator, an index of the level of production intensification. In other words, the transition of the national economy to primarily intensive development without solving the problem of the utilization of wastes is simply impossible.

In the resolution of the CPSU Central Committee and USSR Council of Ministers on the radical improvement of utilizing raw material, fuel-energy and other material resources in 1986-1990 and in the period to the year 2000 significant place is devoted to the problem of secondary resources. In particular, tasks have been confirmed for USSR ministries and departments and councils of ministers of union republics as regards the use of the most important types of secondary raw materials by 1990 and 2000. USSR Gosplan, USSR Gossnab, USSR ministries and departments and the councils of ministers of union republics have been given the task of expanding the nomenclature of secondary resources, the use of which is a task that is confirmed in plans.

At the present time a draft of an improved nomenclature which includes about 250 types of secondary raw materials is being prepared. It foresees that the development and confirmation of tasks on the use of secondary raw materials

will be implemented primarily by those ministries and departments in the enterprises of which the wastes are either created or recycled.

The USSR State Plan of Economic and Social Development for 1987 retains the section "Utilization of Secondary Resources," and tasks on the utilization of secondary raw materials have been passed down to all ministries and departments, including those which have made the transition to new management conditions.

It should be noted that the number of centrally-established tasks has been curtailed significantly and that they are determined according to three indicators (procurement, utilization, delivery) for a total of 46 types of secondary raw materials. Planning for the use of 16 types of wastes has been transferred to USSR ministries and departments and councils of ministers of union republics.

While curtailing centrally-established tasks related to the use of wastes and passing them down to ministries and departments as estimates USSR Gosplan and USSR Gossnab have the task not only to control the fulfillment of established plans in the corresponding branches but also to significantly expand the use of wastes in processing. Under the new management conditions this task should be dealt with differently.

Matters should be arranged in such a way that a maximal number of tasks related to the use of secondary raw materials are reflected in material balances and distribution plans developed by USSR Gosplan, USSR Gossnab, and USSR ministries and departments as well as regional organs of USSR Gossnab and the ispolkoms of local soviets of people's deputies. It is essential that the following principle be fully implemented: recycled materials should be used in place of raw materials, thus sparing the latter. In order to accomplish this a number of organizational as well as methodological measures must be implemented.

Evidently, it would be expedient to alter the sequence for preparing plan drafts in USSR Gosplan in order to foresee, in the early stages of plan draft preparations, the preliminary tasks related to the use of secondary materials in branch departments so that they might be taken into consideration during the development of balances. Here the participation of the materials recycling department should be mandatory in the examination of the degree to which wastes are reflected in material balances. This was done before but without adequate precision or organization.

It will be necessary to increase the precision of the structure of the table which deals with tasks related to the use of secondary materials.

The given changes must achieve maximal correspondence between the planned types of secondary materials and the directions for their use in the material balances that are developed by USSR Gosplan.

Right now this work is in the beginning stages. Some types of secondary materials are precisely classified according to the use purpose. For example, in the 1987 plan the total volume of waste petroleum products earmarked for

recycling can be divided into three categories: for the regeneration and purification of oils, for boiler-oven fuels and for industrial and other purposes. However, a great deal still remains to be done. For example, USSR Gosplan is developing balances and plans dealing with the redistribution of polyethylene, polypropylene, and polystyrene, but in the tasks related to the use of recycled polymer materials established for ministries and departments there is no breakdown of these materials according to type, which makes it practically impossible to account for them when allocating raw materials to consumers.

The situation is complicated by the fact that the balance and plan for the allocation of recycled polymer materials is developed by USSR Gossnab. Moreover, whereas USSR Gosplan allocates polyethylene, polypropylene or polystyrene to ministries and departments, USSR Gosplan allocates secondary polymer materials among its own regional organs which in turn divide it up among enterprises of various ministries and departments located within their jurisdiction.

Thus actually secondary polymer materials are allocated directly to consumers not in the place of primary raw materials but only as a supplement to them. Moreover, this supplement to primary raw materials cannot be accounted for in practical terms in USSR Gosplan, which often creates the possibility of the allocation of excess resources to recipients.

The attitude toward secondary materials as a minor, supplementary source of satisfying demand for raw materials and stock is unfortunately often prevalent when specific decisions on material-technical provisions for ministries and enterprises are made. The manifestation of this type of attitude is most clearly seen in the organization of the building of enterprises which utilize industrial and consumer wastes.

Branch ministries allocate totally inadequate amounts of capital investments for the development of capacities to recycle wastes, and within the system of USSR Gossnab the building of such enterprises is implemented by means of loans from USSR Stroybank [All-Union Bank for the Financing of Capital Investments] and deductions from profits of procurement organizations. Material-technical supplies to constructions are provided by means of working capital and subdepartmental subdivisions.

The opinion has taken root in contract building-installation organizations that these projects are of secondary importance. The systematic non-fulfillment of the plan to complete construction and to put the works into operation has become an unfortunate "rule."

Under existing circumstances it is important to proceed from a single methodological principle when dealing with problems related to the use of wastes at all economic levels--from the enterprise to the ministry, USSR Gossnab or USSR Gosplan. The use of secondary materials to replace natural materials must truly be made a priority and this type of substitutions should occur to a greater and greater degree. This should be not just a solution but an immutable rule. By adhering to it it will be possible to seriously expand resource potential. This is of special significance to our country under the

new economic conditions and because of the transition of the economy toward intensification.

A more consistent observance of this rule when dealing with questions related to the use of, for example, secondary polymer materials presupposes the establishment of tasks for ministries and departments according to types of raw materials allocated and the distribution of primary raw materials to consumers with a consideration of tasks related to the use of wastes and of the allocation of secondary polymer materials by USSR Gosnab to ministries and departments which are holders of capital and not to regional organs of USSR Gosnab.

This kind of scheme for dealing with the question of planned use of secondary materials remains correct for other types of industrial and consumer wastes as well. However, it should be noted that there are relatively few material balances and allocation plans developed by USSR Gosplan in which secondary materials could be considered. For this reason, under the new management conditions the significance of decisions made in branches and regions to maximally include secondary materials in turnover when allocating material resources to enterprises increases.

Evidently, in order to strengthen the methodological foundations for making these decisions, USSR ministries and departments and union republics should develop lists of products and types of work which must be completed with the use of secondary materials where this has not yet been done or make these lists more precise if they have already been developed and bring them into the system and confirm them. The same must be done for branch norms relating to the use of secondary materials in industrial production (proportion of wastes in total expenditure of raw materials and stock during industrial production and coefficients for substituting secondary materials for primary raw materials). It is also time to institute a system in which enterprises-consumers will not receive supplementary reserves of raw materials and stock in the quantities foreseen by the established norms when tasks related to economizing on resources are not fulfilled, including as a result of the inadequate use of secondary resources.

Adherence to the principle of "recycled materials instead of raw materials" with regard to many types of wastes presupposes the transfer of the center of gravity of work to implement state plans related to the utilization of secondary materials to the local level and a strengthening of the role of regional planning.

As an example let us look at slag from non-ferrous and ferrous metallurgy, which is measured in tens of millions of tons. It is used in the national economy primarily as a substitute for local building materials. At the same time we cannot confirm with complete assurance that this type of substitution has actually taken place as foreseen by the plan (for example, in order to enable us to avoid increasing the production of gravel from natural rock by utilizing slag for this purpose instead). The fact is that the allocation of funds for local building materials to enterprises of union, union-republic or republic subordination is implemented by oblast and kray executive committees and by councils of ministers of autonomous and union republics. Timewise this

occurs before ministries and departments assign subordinate enterprises the state plans on the use of secondary materials, and in the given case--metallurgical slag. For this reason there are cases in which enterprises receive more slag than they need. Since the non-fulfillment of the plan on the use of secondary materials hardly affects the economy of the enterprise, enterprises do not refuse the wastes they are assigned and at the same time do not deem it necessary to actively fulfill the plan for utilizing them.

The development of regional balances according to types of building materials, with a consideration in the resource section of these balances of wastes that are created in all of the enterprises of the region, can become one of the effective ways of dealing with the problem of increasing the volume of recycling of wastes as regards local building materials.

The resolution of the CPSU Central Committee, Presidium of the USSR Supreme Soviet and the USSR Council of Ministers of 25 July 1986, "On Measures to Further Increase the Role and Strengthen the Responsibility of the Soviet of People's Deputies in Accelerating Socio-Economic Development in the Light of the Decisions of the 27th CPSU Congress," foresees extensive rights for soviets in the area of organizing the use of secondary materials which are created in the region that is subordinate to them.

In particular, the councils of ministers of union and autonomous republics and the executive committees of local soviets of people's deputies, jointly with the corresponding organs of USSR Gosplan and other ministries and departments, are obliged to organize account-keeping for secondary materials, and establish assignments relating to their collection and their use in the production of consumer goods and other products for associations, enterprises and organizations located in the corresponding region regardless of departmental subordination. Thus, the territorial aspect of planning as regards secondary materials is being significantly strengthened. Conditions are being created for the more effective use of wastes by means of curtailing the distance these wastes must be shipped, by decreasing losses during storage, by increasing the volume of sales of wastes to the population and so forth.

The implementation of the decisions that were made must be reflected in state plans of economic and social development confirmed by the councils of ministers of union republics. However, the new approach to planning the utilization of secondary materials has not yet found the necessary manifestation in republic plans for 1987. A practical exception is the plan confirmed by the Ukrainian SSR Council of Ministers which foresees tasks for many departments, including enterprises of union and union-republic subordination located within the republic, which is based on the volume of secondary materials delivered to procurement organizations, on the use of wastes and on the manufacture of products from them.

The question of developing a general index reflecting the use of secondary materials continues to be on the agenda; moreover, under new management conditions it acquires a special urgency. This question has been studied with sufficient detail and in all aspects during the last 2-3 years by USSR Gosplan, USSR Gosnab and USSR TsSU [Central Statistical Administration]. The practice in socialist countries of utilizing general indices related to wastes

utilization has been studied, particularly the methodology for calculating an index for the proportion of secondary materials within the raw materials balance that was developed by the GDR's [German Democratic Republic] Gosplan.

As a result we can draw the conclusion that the index of proportion of secondary materials in materials consumption, as determined in accordance with the GDR Gosplan methodology as the ratio between the cost of raw materials substituted for by secondary materials to the cost of the raw material under consideration in percent, has some advantages as well as disadvantages which prevent its extensive use in planning practice.

Calculations are carried out in cost indices. The numerator takes into account the cost of the raw material that is freed when secondary materials are used, which establishes the non-dependence of calculation results on the effects of possible changes in price levels for raw and secondary materials. To determine the size of the numerator and denominator not all secondary and raw materials utilized in economic turnover are taken into account, but only a limited group, which simplifies accounts. At the same time it is more difficult to determine the optimal size of the index. Of no small importance is the fact that an increase or decrease in the size of the index of proportion of secondary materials does not always correspond precisely to an improvement or a deterioration in the condition of work to utilize secondary materials. An inverse ratio may also be possible. For example, the introduction of waste-free or low-waste technologies decreases the volume of industrial waste formed, which is naturally a progressive process but which at the same time effects a decrease in the index of the proportion of secondary materials, and this can be interpreted as a decline in the situation regarding the use of wastes.

It is not our goal to analyze the pluses and minuses of this index in detail. We will simply note that the opinion of specialists from our country and from the GDR coincide regarding the fact that the proportion of use of secondary materials as a general index has limited use--namely to evaluate the status of the work that is being done with secondary materials and also to evaluate the assignment of tasks to improve this work on a national economic level, and the index itself cannot be mechanically disseminated as a generalized task to branches and regions. Hopes for this index as a generalized one suitable for inclusion on the list of those confirmed for enterprises and ministries which have made the transition to new management conditions have not proven themselves. The index reflecting the use level of secondary materials could have been such an index. It is most suitable for the formulation of general tasks related to the use of secondary materials and to an evaluation of this work in general throughout the country's national economy, union republics, krays and oblasts. The methodology for calculating it is relatively simple. Growth in the size of the index characterizes improvements in drawing wastes into turnover. Complete utilization of wastes corresponds to an index of 100 percent.

The index of use level of secondary materials, as a general one, could in our opinion be utilized widely when developing plans on the utilization of secondary materials primarily on a regional level as well as for the adoption

of socialist obligations according to region and in summarizing the results of socialist competition.

Improved planning is an effective factor in increasing the volume of secondary materials used. However, outside the context of other factors which comprise the economic mechanism and without coordination with these factors, the strength and significance of planning cannot be manifested to the full degree.

We can present many examples to illustrate this. In our opinion planning for recycling of waste paper by USSR Minlesbumprom [Ministry of Timber, Pulp and Paper, and Wood Processing Industry] is most characteristic. USSR Gosplan develops the balance and plan for distributing fibrous materials for the production of paper and cardboard with a consideration of the waste paper that is used in place of raw materials. It would seem that all the conditions have been developed for planned growth in the volume of waste paper processed in the enterprises of USSR Minlesbumprom. However, this is not the case. During the last three five-year plans in the aforementioned ministry production capacities hardly increased and the volume of recycling of the given material increased insignificantly. The reason for this is that the use of waste paper was planned for the ministry, as is customary, according to the availability of capacities which ministry directors did not take the necessary measures to expand. Within the country's national economy as a whole a situation has developed in which inadequate processing capacities hinder growth in the inclusion of many types of secondary materials in turnover. It is impossible to change the existing situation under new management conditions by using old methods.

The establishment of tasks within the state plan on developing capacities for processing recycling materials with a determination of the volume of capital investments and building-installation work and an indication of the limits on contract operations would not solve the problem since the non-fulfillment of these tasks would hardly affect the results of operations of enterprises, not to speak of the fact that under contemporary conditions the expansion of the number of plan indices does not correspond to the essence of restructuring.

Now during the selection of a methodology for effecting an increase in the volume of recycling wastes priority should be given to economic factors. The thesis regarding creation of an economic mechanism making it advantageous for enterprises to recycle wastes while increasing the corresponding production capacities is being implemented successfully. Various economic benefits are planned for enterprises and material incentives are being planned for workers in order to draw secondary products into turnover.

In rare cases when the collection or recycling of secondary materials brings losses it is possible, on the basis of existing instructions and resolutions, to reexamine prices for wastes and products made from these wastes in order to achieve normal profitability levels.

A question arises: What is the problem--why is the inclusion of secondary products in turnover increasing at an inadequate pace? Why is it that often wastes are taken to the dump and allowed to deteriorate?

In our opinion, the problem is that the collection, delivery, processing and recycling of secondary products, requiring significant expenditures of efforts and personnel, the introduction of elements of a scientific organization of labor and an increase in production quality is economically much less advantageous than the fulfillment of a plan according to basic indices. Whereas the non-fulfillment of a plan related to, for example, the volume of product sales has direct results in decreased deductions into enterprise capital, the non-fulfillment of tasks related to the use of wastes has no accompanying threatening economic sanctions.

For long years the economic stimulation for utilizing secondary materials developed one-sidedly--only in the direction of increasing the interest of enterprises to recycle wastes. At the same time right now there are no measures of economic leverage, or more precisely--no measures compelling enterprises to utilize secondary materials. Yet such measures could become an effective means for stimulating increased use of the many types of these materials.

I feel that the existing situation regarding stimulating the use of wastes must develop primarily in the direction of increasing the economic responsibility of enterprises for shortcomings in this area. Practical decisions made in certain socialist countries confirm the correctness of the conclusions we have drawn.

Thus, in the PNR [Polish People's Republic] there is a so-called fund of secondary material which is an instrument that acts directly on the more effective utilization of secondary materials. Measures have been developed that strengthen the interest of enterprises in using wastes and that provide sanctions when wastes are not used. The distributor of the centralized fund of secondary materials is the republic's minister of the materials industry. The fund is formed through payments by enterprises and organizations which do not recycle the wastes they create during their operations but which sell them on the side, in an amount that is 3 percent of the cost of the sold wastes, as well as through enterprises which destroy their wastes.

USSR Gosnab and USSR Gosplan specialists, having considered the experience of the PNR and CSSR [Czechoslovakian Socialist Republic], have developed proposals on creating an interbranch fund for developing a material-technical base for the procurement and processing of secondary materials.

Under the new management conditions transferring a significant volume of work on planning the use of secondary resources to branches and republics as well as enterprises must be accompanied by a significant strengthening of organizational work by USSR Gosplan and USSR Gosnab.

USSR Gosnab, in fulfilling the resolution of the USSR Council of Ministers, "On Organizing the Procurement and Processing of Secondary Materials on a Cooperative Basis," has begun extensive work to organize cooperation. Already in 1986 there were over 50 cooperatives in operation for the procurement and recycling of secondary materials, and in 1987 their number will increase greatly. An analysis of processes that have occurred during the first months of the development of this movement gives us reason to conclude that continued

development will have a considerable effect not only on the pace of dealing with the problem of recycling wastes but also on the organization of this matter within the national economy as a whole, on the economic mechanism and on its main integral part--planning.

The transition of the national economy toward intensive development requires the mobilization of all reserves, and first and foremost those that do not require extensive expenditures but that yield the optimal effect. This includes the inclusion of secondary materials in economic turnover. Planning their use under new economic conditions is called upon to accelerate the achievement of this.

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GOSPLAN ECONOMIST ON BALANCING PERSONAL INCOME, EXPENDITURES

Moscow DENG I KREDIT in Russian No 5, May 87 pp 30-36

[Article by S. N. Senchagova, chief economist of the USSR Gosplan Main Computer Center: "Improvement of the Balance Method for Planning Personal Income and Expenditures"]

[Text] Under the contemporary conditions of the development of the economic system, the satisfaction of the people's effective demand to an ever greater degree is becoming the most important prerequisite to the proportional and dynamic development of the national economy. In the decisions of the 27th CPSU Congress and the June (1986) and subsequent plenums of the CPSU Central Committee, the task of improving distributive relations and the complete satisfaction of the people's growing demand for high-quality and diverse consumer goods--food, good-quality and attractive clothing and footwear, furniture, cultural articles, complex domestic equipment and household goods--has been placed into the series of the most important social and economic tasks of the 5-year and long-term plans for the development of the national economy. The improvement of the balance method for planning personal incomes and expenditures has an important role in its solution.

As is well-known, the balancing of personal monetary incomes and expenditures is closely associated with the indices for balancing the national economy. The basic national economic proportions and correlations are indirectly reflected in it: between the consumption fund and the accumulation fund, between the first and second subdivisions and between the rate of growth of the average wage and the growth of labor productivity.

In the balancing of personal monetary incomes and expenditures, personal incomes, which make up part of the value of the output of the first and second subdivisions, are coordinated among themselves with their material coverage--the output of the second subdivision. The many years of experience in the development of the economic system have shown that in the case of an unjustifiably high lead factor for the growth rate of the first subdivision in comparison to the growth rate of the second subdivision, the newly created value in the first and second subdivisions substantially exceeds the value of the entire output of the second subdivision. One of the basic reasons for this is the fact that the demand produced for the output of the second

subdivision is not completely satisfied. And this, as is well-known, has an unfavorable effect on the monetary turnover and reduces its stability.

If the people's effective demand exceeds the volume of its commodity coverage and services, then the amount of ready cash in circulation will grow faster than is determined by the requirements for the turnover of goods and services. The disproportions in the money turnover serve as a warning about disruptions in the reproduction ratios. The measures adopted for the regulation of the turnover facilitate the best degree of balancing for the development of the national economy.

In the 11th 5-Year Plan, while maintaining the advancing development of the first subdivision, there occurred a drawing together of the growth rates of both public production subdivisions. This was facilitated by the advancing development of the industry of group B in comparison to group A. In the 12th 5-Year Plan there will be a strengthening of the tendency towards the leading development of group B's industry. Thus, it is intended that there be an average annual increase in all industrial output of 3.9-4.4 percent, in group A's output of 3.7-4.2 percent and in group B's output of 4.1-4.6 percent. Such correlations in the dynamics of the most important reproduction indices should, under otherwise equal conditions, exert favorable influence on the degree of balancing of personal incomes and expenditures and of the entire national economy as a whole.

The correlation between the production of production means and the production of consumer articles does not remain invariable and therefore one of the most important tasks of planning is the determination of the measure for advancing the growth of the first subdivision in comparison to the second subdivision. A specific criterion of the correctness of the ratios between the first and second subdivisions can be not only the stable growth rate of the national income, but also the high degree of balancing of personal monetary incomes and expenditures.

As is well-known, the output of the first subdivision minus the recovery fund is intended for accumulation and that of the second subdivision is basically for consumption and, therefore, the distribution of national income to the accumulation fund and the consumption fund is associated with the ratios between the first and second public production subdivisions. The increase in the proportion of the first subdivision, all other conditions being equal, is equivalent to the increase in the portion of accumulation in national income and, on the other hand, the higher rate of development of the second subdivision will lead to an increase in the portion of the public consumption fund.

Inasmuch as the basic part of the goods and services which enter into the consumption fund is acquired through personal monetary incomes and the latter makes up a large part of the national income, then these incomes are directly related to both the magnitude of the national income and to the portion of the consumption fund. The greatest portion of the consumption fund in the national income was noted in the 11th 5-Year Plan (74.9 percent) (1). The growth in the portion of the consumption fund occurred under the conditions of the deceleration in the growth rate of the national income. At the same time,

the presence of the people's unsatisfied demand was noted (2). The policy of personal monetary incomes in this period did not exert active influence on the growth of production and the reduction of the portion of accumulation was not compensated for by the growth of public labor productivity--the most important factor in the growth of the national income.

The growth of the portion of the consumption fund is accompanied by the growth of personal monetary income, but does not guarantee their balancing with material coverage. Moreover, the growth of the consumption fund and the reduction of the portion of the accumulation fund can entail a reduction in the growth rate of the consumption fund in the future and only a harmonious combining of the current consumption with the ensurance of high rates for the public production in the long term creates the opportunity for the stable growth of prosperity.

In the Basic Directions for the Economic and Social Development of the USSR for the Years 1986 through 1990 and for the Period up to the Year 2000, provision has been made for increasing the growth rate of capital investments, as well as of the portion of the accumulation fund with a simultaneous increase in the absolute volumes of goods and services for the people. Such a maneuver is intended to be accomplished through the planning of high indices of efficiency in public production under the conditions of the transition to a primarily intensive path for the development of the national economy. The absolute increase in the consumption fund should increase in the 12th 5-Year Plan up to 74 billion rubles in comparison to the 55 billion rubles in the past (3) plan. It must be noted also that a ponderable portion of the accumulation fund will go for the increase in non-industrial funds and play its own positive role in the expansion of social and cultural construction and in the development of education, of health care, of housing and municipal services and of domestic services for the public.

The basic part of the consumption fund associated with the realization of personal monetary incomes is reflected in the balancing of personal monetary incomes and expenditures.

All the sources for the derivation of personal monetary incomes are indicated in the income section of the indicated balancing: wages, monetary incomes from kolkhozes, receipts from the financing system, pensions, grants, stipends, receipts from the sale of agricultural products and other forms of incomes; and in the expenditures section--the purchase of goods, payment for services and other expenditures.

The association of the indices for the balancing of personal monetary incomes and expenditures with the consumption fund has a great deal of significance during the planning of social development and for raising the people's standard of living. The consumption fund should be linked with the balancing of personal monetary incomes and expenditures in order to prevent an imbalance between the personal monetary incomes and the resources of goods and services which society has available for the growth of the people's prosperity. In this instance, the balancing of personal monetary incomes and expenditures functions as a balancing scale between the financial and the material and physical sides of the consumption fund and between the first and second

subdivisions of the gross national product. In essence, it is the main method for checking the conformity of the consumption fund to the basic national economic ratios which express the possibilities for satisfying public demands for material and cultural goods in the planned period.

The other important national economic ratio which has a direct relationship to the balancing of personal monetary incomes and expenditures is the correlation between the growth rate of labor productivity and the growth rate of wages. The correlation between the dynamics of these indices, to a large extent, determines the degree of balance between the personal monetary incomes and expenditures.

If the growth rate for wages exceeds the growth rate for labor productivity, then the influx of the goods volume for consumers becomes relatively narrow and there arises a shortage of goods and the correspondence between effective demand and its material coverage is disrupted.

The gap between personal incomes and commodity resources was generated in the period from 1970 to 1985 to a significant degree as a result of the fact that the importance of maintaining the ratios between the growth rates for labor productivity and wages was underrated (4).

Under the conditions of the economic system's turn to a primarily intensive path of development, the necessity of increasing the degree of balancing of the basic ratios of the national economy's development and particularly that of personal monetary incomes and expenditures increases. The more rapid growth of labor productivity, of efficiency in the use of industrial resources and of the national income should lead to an increase in personal monetary incomes and in effective demand. Consequently, the acceleration should be associated with both an increase in the volumes of public consumption commodities production and also an improvement in their quality and construction, taking into account the demands of the various social groups and layers of the populace. Thus, a part of the necessary increase in the volume of output can be compensated for by goods of the best quality.

The task set for the 12th 5-Year Plan of satisfying the growing effective demand is complicated by the fact that the real situation in the country's domestic market is characterized at the present time by an imbalance between the effective demand and the supply of goods. The growth rates of the standard of living in the 10th and 11th 5-Year Plans were not ensured to the proper degree by the economic resources (5).

As is well-known, the growth rate for labor productivity depends to a large extent on the material incentive and on how much the wage system, including the procedure for the derivation and use of incentive funds, creates the conditions for intensive and result-getting work. At the same time, it is important that wages are a genuine stimulus. And this requires maintaining the ratios between the growth in monetary wages and the growth in the physical volume of public consumption commodities production and services. Analysis indicates that such a correspondence is maintained when there is a leading growth in labor productivity in comparison to the average wages. Disruption of this correspondence will lead to an increase in output production costs, to

a reduction of savings for expanded reproduction and to a weakening of the stimulating role of wages in raising labor productivity. At the same time, important national economic ratios are disrupted--the correspondence between personal monetary incomes and expenditures, the amount of money in circulation and the requirement for its circulation. This creates a necessity for the USSR Gosbank to constantly monitor the correlations between the growth rate for labor productivity and that for average wages.

In physical production, the planning of the correlation between the growth of labor productivity and average wages and the monitoring of its dynamics would indirectly link monetary incomes with their material coverage, i.e., with the output of the second subdivision. In those instances when the incomes received in the non-industrial sphere grow faster than in the physical production sphere, it is necessary to plan an even greater lead factor for the growth of labor productivity in comparison with the growth of the average wages, which makes it possible to ensure a more complete material coverage of all the personal monetary incomes (6).

The discussed ties between the balancing of personal monetary incomes and expenditures and the most important national economic ratios yield a basis for considering that the ensurance of the correspondence between personal monetary incomes and expenditures is one of the conditions for balancing the national economy on the whole. The gap between the demands and the degree of their satisfaction led to the formation of an unsatisfied demand which has a negative effect on many aspects of life of contemporary Soviet society. This is associated with the fact that, first, the scarce goods are the object of speculation and go to a significant extent to those persons who have large incomes and frequently into the hands of those who do not work for a living; second, the imaginary prestigiousness of the trades which have access to material wealth; third, the shortage intensifies the pendulum-like migration of the populace. The unequal supply level of a number of goods according to regions of the country influences the migrational streams.

In the sphere of consumption, even an imbalance insignificant in size which is intensified by the structural imbalance becomes apparent in the sharp disproportions in a number of goods and commodity groups. In this situation, the consumer loses the sense of proportion, forgets about the scantiness of his own income and emerges with excessive ambitions and pursues the scarce goods, which, naturally, intensifies even more the imbalance of demand and supply and also has a negative effect on the formation of rational demands. In addition to the indicated consequences of the general and structural imbalance, there is also registered a growth in the expenditure of free and work time searching for goods and services. According to economists' calculations, the time lost in shopping, dining and domestic services amounts to 36 billion hours annually or two-thirds of the total amount of time expended in the consumption sphere (7). At the same time, a sort of "law" of compensation becomes effective: what free time the population loses because of the search for the needed good, it recovers through a reduction in labor intensity.

The imbalance between personal monetary incomes and expenditures, first and foremost, affects the money circulation. Disruptions in the money circulation

are associated with the deceleration in the goods turnover rate, which is explained by the increase in the gap in time between the distribution of money to the populace and their realization and the deposit of it in the Gosbank. The deceleration in the turnover rate of monetary assets entails the issuance of money which is not justified by economic conditions. Therefore, during the planning of the balancing of personal monetary incomes and expenditures, it's important to take into account its close association with the Gosbank's cash and credit plans and also the necessity of coordinating the individual indices (articles) of the indicated plans and balances.

As is well-known, the balance of the cash plan reflects the change in the money balances in the accounts of enterprises, institutions, organizations and the populace. At the same time, the final result of the balance (incomes exceeding expenditures or vice versa) characterizes the change in the surplus of ready cash just in that part which is in the hands of the populace. Inasmuch as this part is basic, it is possible to consider that the total indices of the two balances coincide but are opposite in significance. The result of the account balance indicates the change in the surplus of ready cash in the hands of the populace. This important element is not reflected in the plan balance.

The principle of planning the "equality" of personal monetary incomes and expenditures, in conformity with which at the present time the calculation of the balance is carried out, has long been subjected to criticism on the part of economists (8). The goal of such a planning method is to concentrate efforts at coverage of the total volume of personal monetary incomes under the condition of the stabilization of the amount of money in circulation. In our opinion, such a method is not economically well-founded, since, in conformity with the regularities of the growth of the ready cash turnover as a consequence of the growth of commodity production and the increase in the volume of the amount of goods, the amount of money also grows. I.e., the issuance of money caused by this growth is a normal phenomenon reflected in the balancing of personal monetary incomes and expenditures in the change of the surplus of ready cash in the hands of the populace. More correct, it seems, is the planning of the indicated index for the purpose of mastering the situation and providing in advance the solution to it in stages. This would have practical significance for more accurate planning of all personal monetary assets and for ensuring their balancing with the development of the sectors producing public consumption goods and rendering services.

As a basis for the interdependence between the balancing of personal monetary incomes and expenditures and the Gosbank's cash and credit plans are the objective regularities of the money turnover which determine the amount of money in circulation. As is well-known, the most important significance of the cash plan lies in the establishment of the issuance result, i.e., of the planned scope of the issuance. The money placed in circulation serves as a credit resource for the USSR Gosbank. The issuance of money depends to a substantial degree on the condition of the balancing of personal monetary incomes and expenditures. This is caused by the fact that part of the monetary incomes received by the populace and not used to acquire goods or for the payment of services remains in the hands of the populace and can be directed towards one or another industrial purpose. It is precisely in

connection with this that the issuance of money within specified limits without prejudice to the economic and financial ratios can be a resource in the financial balancing and in the Gosbank's credit plan, having an objective basis in the balancing of personal monetary incomes and expenditures. A principal question is one about the possible limits for the use for industrial purposes of the excess of personal incomes which exceed expenditures.

The fact is that the indicated excess can be caused not only by the objective regularities of the use of monetary incomes, but also by factors associated with the imbalance of incomes and expenditures, i.e., with the excess of the demand for goods and services in comparison to their supply. At the same time, in order to implement the financial and credit planning, it is important to know which part of the personal monetary incomes is caused naturally, i.e., has material coverage, and which is a consequence of a disruption of the ratios in the national economy and is associated with the unsatisfied demand.

In our opinion, the isolation of the unsatisfied demand in the calculations of the balancing of personal monetary incomes and expenditures is dictated by practical requirements. The use of the issuance as a credit resource has economic limits, the disruption of which can intensify the disproportions and increase the imbalance between personal incomes and expenditures. During the determination of the requirement for monetary assets to ensure expanded reproduction, it is necessary to proceed from the planned ratios for the distribution of the gross national product and the national income.

In addition to the issuance, personal savings (the surpluses of investments in savings banks and personal assets in insurance policies) emerge as a source of resources for the USSR Gosbank's credit plan. In the balancing of personal monetary incomes and expenditures, the growth of savings is reflected in the make-up of deposits in savings banks, of deposits in the Gosbank and of the purchase of the obligations of a State Internal Lottery-Loan. From the point of view of more complete and economically correct planning of personal savings in all forms, as well as the best of their links with the credit and cash plans, in our opinion, without disrupting the traditional balance chart, it would be better to indicate savings in a separate table made up of the following indices: personal deposits in savings banks, personal deposits in the USSR Gosbank, personal assets in obligations of a State Internal Lottery-Loan, personal assets in insurance policies and surpluses of cash in the hands of the populace. Here too, it is necessary to isolate the unsatisfied demand. This will have practical significance in connection with the credit plan, inasmuch as, as V. I. Rybin justifiably notes, the part of personal savings which reflects the unsatisfied demand can not be a full-fledged credit resource and the distribution of credits based on them will lead to an imbalance in the physical and material ratios and to a weakening of the country's money turnover (9).

For scientifically based planning, it is important to achieve a correct understanding of the interdependencies between personal incomes, the effective demand and savings. The scale and structure of the effective demand, as well as personal savings, are determined by the volumes, structure and dynamics of the personal incomes. However, the effective demand with normal savings (under the conditions of the balancing of demand and supply) less personal

incomes is approximately equal to the amount of obligatory payments and personal voluntary ones (taxes and duties, payments to public organizations and for state insurance, repayment of bank loans, fees to housing construction cooperatives and so on), as well as the total of the increase of normal personal savings. Other correlations between the indicated categories form under the conditions of the disruption of the balance between demand and supply and long-term shortages in individual commodity groups. In this situation, savings are increased not only under the influence of the growth of incomes for the accumulation of money for purchasing expensive goods and other economically justified reasons, but also because of the shortage of goods.

If this situation is maintained over the course of a prolonged period of time, then it is impossible to determine the effective demand proceeding from the sum of monetary incomes minus the obligatory payments and voluntary ones and savings. It is necessary to consider the people's unsatisfied demand and to add this demand, unrealized in the past, to the monetary incomes of the current year. In other words, the people's consumer demand must be determined not on the basis of the people's annual incomes, but rather by taking into account the specific portion of the incomes previously not realized. Under the conditions of the promotion of the use of commodity-money relationships, there is a change in the approach to the formation of the balancing of personal monetary incomes and expenditures. The starting point during its planning becomes the study of the regularities of the demand for public consumption goods. Today the accent should be placed on the calculation of the demand of the various social and income groups of the populace. The balancing of personal monetary incomes and expenditures in its present form is not prepared for such a use, inasmuch as the effective demand is determined globally as the difference between incomes and non-commodity expenditures and the increase in savings. Thus, the current demand is so determined and the unsatisfied demand is considered indirectly via the planning for the increase in savings: the smaller the planned increase in savings, the greater the amount for the market demand.

The correspondence between demand and supply is determined by the entire process of the reproduction of the national product and by its basic ratios and regularities. But of no less important significance are other factors which influence the balancing of demand and supply. One of them is the structure of the retail commodity turnover and services. The established structure of public consumption commodities production predominates for the time being as the basis for determining the volume of the retail commodity turnover and to a lesser degree the regularities of the people's demand for goods and services are taken into consideration. Demand still did not become an active factor of production development and of the transformation of its structure. Because of the slow restructuring of its structure, production strongly delays the time frame for the satisfaction of demand, which generates chronic zones of shortage.

The study of the effective demand and its long-term trends and the timely exposure of the zones and the scale of the shortage to an ever greater degree should become an important starting point for the planning of the production program of the sectors which satisfy the needs of the populace, as well as of its resource provisioning both from the point of view of the necessary volumes

of capital investments for these sectors and the isolation of financing and credit resources for them. The promotion of the role of demand does not at all mean a return to the concept of an advancing growth in demand over supply. In the most important national economic chain "production and consumption," pre-eminence belongs to production. But a one-sided orientation towards production is dangerous because there occurs a temporary suspension of established trends in its structure and in this instance everything which dictates the demand of the populace seems not to apply to the sphere of the production of goods and services for the people. The Basic Directions for the USSR's Economic and Social Development for the Years 1986-1990 and for the Period up to the Year 2000 are intended to increase the volume of retail commodity turnover in the 12th 5-Year Plan by 18 to 22 percent. The complexity of the solution of this task is caused by the fact that the increase in the volume of production should occur based on its structural restructuring and the enhancement of the role of the quality indices.

From the point of view of the balancing of the effective demand and supply, the development of paid services has enormous significance. In comparison to food products and non-food goods, they still do not occupy the corresponding place, which is assigned to them by the rational standards of consumption. The portion of incomes for paid services in the family budget of blue-collar and white-collar workers is small and is increasing extremely slowly and in individual periods has even been reduced. In 1970 it amounted to 9.4 percent and in 1981 to 9.1 percent (10). Meanwhile, according to the estimation of the specialists, at the established level of consumption of material wealth, the relative share of services in a family budget should amount to no less than 11 to 13 percent (11). In the European socialist countries, this channel occupies a significantly larger place in personal expenditures. The demand for domestic services is not being completely satisfied for the time being and it is necessary to achieve a substantial increase in the portion of services for public consumption, which will make it possible to convert a part of the public's effective demand and will improve the balancing of demand and supply.

The Basic Directions for the USSR's Economic and Social Development for the Years 1986-1990 and for the Period up to the Year 2000 are intended to increase the volume of services by a factor of 1.3 to 1.4, to raise their quality and the standards of the services. There will be development of new forms of services which make use of the increased demand such as the improved finishing of apartments through the private involvement of the assets of the new inhabitants, services associated with the management of private subsidiary farms, the development of amusement complexes and others. In certain of the union republics, such as the Belorussian SSR, the Ukrainian SSR and the RSFSR, positive experience in the development of paid services for sports and health-improvement has occurred: there are sports and health-improvement centers, health groups, the organization of firms for the rental of sporting goods and other services. In the Estonian SSR, new contract forms for the organization of the production of services were developed, ensuring a close coordination of wages with the volume and quality of services to the populace.

Part of the people's purchasing demand is satisfied by purchases from consumers cooperatives and at kolkhoz markets. The Tsentrosoyuz serves more than 40 percent of the country's population living in rural areas and in small

cities and its share of the entire commodity turnover comes to more than 27 percent. And this share has not appreciably changed since 1981. The kolkhoz market share of the people's commodity purchases since 1970 amounts to nearly 3 percent (12). The expansion of the indicated channels for the realization of personal monetary incomes is closely associated with the development of the citizens' private subsidiary farming. In recent times, more attention has begun to be paid to this matter. Contracts are being concluded between the sovkhozes, the kolkhozes and the populace for the raising and purchasing of surplus cattle and poultry and for purchasing surplus milk.

The problem of balancing personal monetary incomes and expenditures should be solved taking into account the entire set of factors which facilitate to a greater or lesser degree the expansion of the channels through which the public might use its monetary incomes. In this instance, we are talking about drawing into the distribution turnover the people's monetary savings and current cash surpluses, which represent monetary asset surpluses remaining after the expenditures for obligatory and voluntary payments, for purchases of goods and for payment of services. The widespread network of savings banks, the attraction of the USSR Gosbank account and the development of all types of insurance divert the public's monetary assets from the consumer market for goods and services. The Gosstrakh [State Insurance] organs are paying a great deal of attention to the improvement of the insurance matter, which facilitates the expansion of insurance operations and the growth of the number of people insured. Life insurance has received special development in our country and, nevertheless, there exist significant reserves for the use of potential possibilities for insurance both from the point of view of the flexibility of conditions and the development of new forms: such as old-age pension insurance, group and family insurance and insurance for schoolchildren.

There are also reserves for increasing the role of savings in the balancing of current personal monetary incomes and expenditures. Although the workers' temporarily free money assets are not easily controlled, the systematic organization of saving and the improvement of its forms taking into account the experience of the socialist countries has enormous significance for the further increasing of the absolute and relative increase in the people's assets in investments.

For the purpose of attracting additional assets into investments, it is possible to introduce new forms of special purpose-type investments (the acquisition of specific goods, tourist trips, housing, garden plots, garages). It is necessary to promote conditions of lottery investments, attracting investors with larger merchandise prizes (scarce model compact cars and others) and also to significantly increase the construction of cooperative and individual residences using the people's savings and aided by credit. For this purpose, the proposal has been made to introduce housing investments in savings banks; the primary right to join HCC's [Housing Construction Cooperatives] will go to the blue-collar and white-collar workers who have special purpose housing investments. In addition, for the convenience of the investors, a procedure for paying investments to the people is being introduced by all the savings banks of a given rayon (oblast) which have a telephone connection with the central savings banks and personal experimental

accounts have been organized for manufactured goods purchasable in state trade stores costing from 25 to 1,000 rubles using checks from checkbooks.

The realization of the indicated proposals, as well as the expansion of the innovations, for the purpose of improving savings will facilitate the growth of the people's savings accumulated in state savings banks and the USSR Gosbank.

Balancing personal monetary incomes and expenditures is a complicated process which includes both one-time solutions in the area of production and distribution and long-term ones associated with the establishment of conditions for a more rapid development of the sphere of the production of goods and services rendered to the public. It is possible in the following manner to systematize the conditions and factors for ensuring the balancing of personal monetary incomes and expenditures: a leading growth rate for the group "B" sectors; the production of public consumption goods in the necessary quantity, assortment and quality and also their well-founded distribution according to territory; the advancement of the growth rate of labor productivity in comparison to the increase in average wages; intensification of the monitoring of the outlay of wages (the elimination of supplements, payments of unearned money and the distribution of undeserved bonuses); a more rapid growth of payment for services in comparison to personal monetary incomes; the introduction of new forms of service and new types of services, the raising of their quality and the reduction of the time frame for performance; the active use of the instrument of prices taking into account the conditions of commodities production, their consumer properties and the observance of the most important requirement of the economic policies--the growth of real personal incomes, the degree of balancing of the producible product with the public requirements and demand, which does not exclude the expediency of raising prices even for food products for the purpose of a substantial reduction of budget subsidies under the condition of the accumulation of commodity resources and the payment of compensation to the public for wages; the promotion of existing channels and the creation of new channels for the realization of personal monetary incomes (the development of the consumers cooperative trade, the establishment of cooperatives for the reprocessing of secondary resources, as well as in the sphere of the production of public consumption goods and services, the attraction of personal money assets into insurance, into deposits in savings banks, into the construction of HCC's and individual housing construction, and gardening and suburban cooperatives).

To what has been said, it is necessary to add:

the necessity of improving work on the study and prediction of the public's demand for goods and services; raising the responsibility of trade for the study of the demand and intensifying its influence on industry with agreement on the volumes, assortment and quality of goods.

the further improvement of the economic mechanism and the raising of the level of interest and responsibility of industrial, trade and service-sphere enterprises and organization for the satisfaction of the public's needs and demand (the development of contract ties between production and trade and

between the industrial sectors, the establishment of industrial-trade associations, the stimulation of a rise in the quality of goods and the acceleration of the sale of goods, the establishment of a specialized network of stores for the sale of particularly popular, high-quality and expensive domestic and imported articles, as well as the development of trade in inexpensive goods in great demand);

enhancement of the role of the balancing of personal monetary incomes and expenditures by means of raising the quality of the balancing of personal monetary incomes, of the pattern of goods and services and raising of the retail prices with the isolation of the unsatisfied demand and monitoring of its gradual elimination.

FOOTNOTES

1. "The USSR in Figures for the Year 1985," FINANSY I STATISTIKA, Moscow, 1986, pp 192-193
2. KOMMUNIST, 1986, No 14, p 67
3. EKONOMICHESKAYA GAZETA, 1986, No 23, p 2
4. KOMMUNIST, 1986, No 2, p 63
5. "Urgent Financial and Credit Problems," NAUCHNO-TEKHNICHESKIY INFORMATIONSNYY SBORNIK, Moscow, 1985, Issue 4, p 48
6. S. I. Lushin, "Konechnyye fondy ispolzovaniya obshchestvennogo produkta" [The Final Funds for the Use of the National Product], Moscow, 1979, p 7
7. VOPROSY EKONOMIKI, 1985, No 11, p 111
8. "The Organization and Planning of the Monetary Turnover," FINANSY I STATISTIKA, Moscow, 1981, p 97; "The Role of Finances in the Country's Social and Economic Development," Ibid, 1986, p 196
9. KOMMUNIST, 1986, No 14, p 72
10. VOPROSY EKONOMIKI, 1985, No 11, p 110
11. Ibid.
12. "The USSR's National Economy for the Year 1984," FINANSY I STATISTIKA, Moscow, 1985, p 476

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PROBLEMS, PROSPECTS FOR COAL INDUSTRY DESCRIBED

Moscow PLANOVOYE KHOZYAYSTVO in Russian No 7, Jul 87 pp 29-36

[Article by V. Taradayko, USSR Gosplan department chief: "The Coal Industry: Its Prospects and Problems"]

[Text] The coal industry occupies an important place, not only in the fuel and power complex, but also in the national economy on the whole. Coal is fuel for power stations and TETs', coke, without which ferrous metallurgy can not operate, a raw material for other industrial sectors and a domestic fuel for the populace.

Over the years of Soviet power, the coal industry has been converted into one of the base sectors of the national economy. In 1986, the coal output amounted to 750 million metric tons. New coal basins and deposits, primarily in the eastern regions of our country, are being exploited.

In accordance with the degree of development of all the sectors of the fuel and power complex, the structure of the fuel and power balance has been improved and the place of the coal industry in it has been changed. In recent years, with the exploitation of the large oil and gas deposits and the high rate of increase in the output of oil and gas (despite the fact that the coal output, for example, in 1985 had increased in comparison to that of 1940 by a factor of 4.5), coal's share of the fuel and power balance decreased slightly.

In the decisions of the 27th CPSU Congress, it was stipulated: "The development of the fuel and power complex's sectors is to be subordinate to the task of the stable ensurance of the country's needs for all types of fuel and power by means of increasing their output and production with the systematic carrying out of a purposeful policy of power conservation in all the sectors and spheres of the national economy." (1) The USSR's power program for the long term provides for a high development rate for the coal industry.

The accelerated development of the sector is ensured, first and foremost, by the availability of enormous coal reserves. Suffice it to say that in the USSR they amount to nearly a third of the world's reserves. At the same time, a significant part of the reserves is suitable for strip mining, including such unique deposits as the Ekibastuz deposit in Kazakhstan and the Kansk-

Achinsk deposit in Eastern Siberia, where it is possible to carve out pits on the order of 50 million or more metric tons per year with very high technical and economic indicators.

In discussing the prospects for the coal industry's development, it is impossible to ignore its sectorial peculiarities. First and foremost, here it is impossible, just like in any processing sector, to select the sites for the construction of the shafts and cuts, inasmuch as this is adapted to the deposit and determined by means of technical and economic comparison of the variations. In conformity with the design, each shaft or pit has a mining field, within whose boundaries the coal is extracted and on which the exploitation time frame depends.

In the operation process of the shaft or the pit, there are three different periods: the developing of the planned capacity (in the time frames determined by the standards), operation at the level of the planned capacity (the most prolonged period) and the tapering off of the output in connection with the exhaustion of the reserves. It begins with the upper levels, those closest to the surface, however, by the time it gets down to the exhaustion of the last levels, it is necessary to prepare new levels, having extended the mine shafts, having set up the workings next to the shaft and having installed the necessary equipment and so on. Thus, over the course of the operating time of the mine, in order to maintain the planned level of coal output, capital construction should be carried out.

Over the last 15 years, the coal output in the country increased by more than 100 million metric tons, including 77 million metric tons over the years of the 9th 5-Year Plan, mainly due to the eastern regions of the country, where the basic long-term coal reserves are concentrated. Over these years, put into operation were such large, highly mechanized enterprises as the Bogatyr Pit in Kazakhstan, the Raspadskaya Mine in the Kuznetsk Basin, the Mine imeni Stakhanov in the Donetsk Basin, the Vorgashor Mine in the Pechora Basin, the Estonia Mine, the Siberia Concentrating Mill and others.

Within the sector, significant operations have been carried out on the technical re-outfitting of mines and pits. Widespread use is being made during coal mining of the mechanized complexes and the combine method of developing preparatory workings, the relative share of which in the total breakage mining increased by factors of 2.9 and 2.5 respectively.

Over these years, new and advanced equipment has been developed, including mechanized complexes for working thin and sloping veins with hard-to-control roofs. The production of new models of productive and reliable conveyors made from unified units has been achieved and the structure of the collapsible scraper conveyors has been improved.

The coal pits have been equipped with new, highly productive equipment with large individual capacities--excavators with a scoop volume of 15-20 cubic meters, rotor systems, large-load dump trucks and coal-carriers, powerful drilling machines, tractor units, dump cars, bulldozers and so on. In connection with the necessity of drawing into the mining the ashier beds, serious work is being carried out on improving the quality of the coal. The

volume of its conversion at the concentrating mills and the production of concentrate has increased by a factor of nearly 1.4.

There have been constant improvements in the working conditions of the miners, for whom the ventilation systems have been redesigned and additional ventilators have been installed, along with systems for monitoring the methane content in the mine's atmosphere and stationary and mobile units for conditioning the mine's air.

In recent years, particularly in the 11th 5-Year Plan, the growth rate for coal output has been significantly reduced (its increase for the years 1951-1965 amounted to all of 10 million metric tons). The incompleteness of the tasks of the 5-year plan has been associated, first of all, with the unsatisfactory operation of the enterprises. In many mines, they have tolerated a lag in extending the shafts and in preparing the new levels and the front of the breakage line of the faces and there has been a falling off in the use of production capabilities and basic equipment, and first and foremost of the mechanized complexes: the daily output from one longwall has been reduced, one equipped with a mechanized complex, as has the rate for carrying out preparatory workings using sinking combines. At the coal pits, the lag in removal operations led to a disruption of the technique for conducting mining operations and the rhythm for coal production. In order to improve the state of affairs, the mines were switched over to continuous operations, which complicated the carrying out of repair and maintenance operations. The putting into production of new, advanced types of mining equipment has been dragged out for prolonged periods of time. The quality of the mined coal has deteriorated. All this has led to a reduction in labor productivity and an increase in production costs.

One of the important reasons for the unsatisfactory work and the lag in the development of the sector in recent years has been the incompleteness of the capital construction plans.

The plan tasks for the starting of development of new mines and pits and the renovation of existing mines and pits had systematically not been completed, which led to a reduction in the (stockpile of capacities found in development). The development time frames exceeded the standard ones by factors of nearly 2 to 2.5 and the estimated cost of the projects being developed increased significantly.

The unsatisfactory course of the development has been explained in part by the inadequate capacity of the USSR Ministry of the Coal Industry's contract construction organizations and of the base of the construction industry. In the course of an extended period of time, the plans for the construction of the construction industry's projects had not been completed and the capacities placed in operation had been underexploited.

Along with the lag in mine development, the plans for the construction of houses and cultural and domestic service projects have not been completed. Just in the 11th 5-Year Plan, 1.8 million square meters of housing as well as many projects in the social sphere were not completed, which complicated the completion by the workers of the mines and pits under development and the

existing mines and pits and especially those of the construction organizations.

In order to eliminate the lag tolerated in the 11th 5-Year Plan and to improve the operation of the sector, measures have been designated for the development of the individual coal basins, for the development of strip mining of coal, for the technical retooling of the coal machinery industry as well, and the establishment of large fuel and power complexes. For the purpose of attracting skilled workers into the coal industry and retaining them in the sector, the wage rates and salaries have been raised and additional privileges have been established for the miners. At the same time, the enterprises' material and technical base has been enhanced.

The implementation of the indicated measures has made it possible to provide in the 12th 5-Year Plan for a high development rate for the sector and for increasing the efficiency of the coal industry's operation--it is intended that the level of the of coal output in 1990 be driven up to 760-800 million metric tons. The output of stripmined coal will be developed at an accelerating rate and its portion of the total output will be increased to 46.2 percent.

A distinguishing feature of the long-term period is the establishment, in the regions with large deposits, of fuel and power complexes with the development of high-capacity pits and heat and power stations, which supply the enterprises, and also of a general infrastructure and well-built cities and settlements.

Among such complexes, one must take note of the Ekibastuz fuel and power complex, the construction of which was begun in the previous 5-year plan. At the present time, production is going on at the largest pits, Bogatyr, Vostochnyy and Severnyy, which supply fuel to Ekibastuz GRES No 1 and the Yermak GRES. Ekibastuz GRES No 2 and the Southern Kazakhstan GRES are being constructed. A significant part of the Ekibastuz coal is being used in the Western Siberian region and in the Urals. In 1990, the output of Ekibastuz coal will exceed 90 million metric tons. Exploitation of the Maykyubenskoye deposit will begin.

Construction is being completed on the Southern Yakutsk coal complex, where the high-capacity Neryungri pit for the production of coking coal and a concentrating mill are being operated.

Of special interest is the Kansk-Achinsk fuel and power complex. Its coal will be used not only as fuel for power stations, but also (in the future) for obtaining motor fuel and brick heating fuel from the coal. This is a basin with highly favorable production conditions. At relatively shallow depths are sloping seams of lignite 100 meters wide with an ash content of 8-12 percent and a very small amount of sulfur. The large reserves and the favorable mining and geological conditions conditions make it possible to implement here the development of coal pits with a capacity of 50 and more million metric tons of coal per year with very high technical and economic indicators.

Already in the current 5-year plan the development of the first line of the Berezovskiy pit is being completed, development has begun on the first line of the Borodinskiy pit and Berezovsk GRES No 1 is being constructed (in the future another series of large heating and power stations should be established). By 1990, the output of the Kansk-Achinsk coal will increase by a factor of 1.5.

The Kuznetsk Coal Basin, as well as the basins of Eastern Siberia and the Far East, will be developed at a rapid rate. The Kuznetsk Basin in perspective is the basic region for increasing the output of coking and high-quality power-system coal. Calculations have shown the efficiency of their use in the European section of the country. The basin possesses reserves of bituminous coal, which make it possible to set up large coal pits and mines. Exploitation of the new Yerunakovskoye and Karakanskoye deposits has also begun there.

The country's oldest coal basin, the Donetsk Basin, is not losing its own importance. Here a program has been planned for the technical re-equipping and renovation of the existing mines. Serious attention has been paid to improving the quality of the coal and to increasing the volume of its treatment at concentrating mills and the production of concentrate, including concentrate for coking. Taking into account the assortments and arrangements, the total scope of mechanically produced coal will exceed 60 percent.

In conformity with the decisions of the 27th Party Congress for ensuring the municipal and domestic needs of the populace are met, provision has been made for increasing the production of various grades of coal by more than 20 percent and of coal bricks by a factor of 1.7.

In order to achieve the intended production volumes in the sector, it will be necessary to implement a significant development program. Capital investments must first be directed towards the complete technical re-equipping and renovation of the existing mines and pits and measures will have to be adopted for improving the state of mining operations and the elimination of bottlenecks in the technological chains, in order to ensure the exploitation of capacities in the majority of the mines and pits where they are still not being used to the fullest.

The initial program has been ensured by capital investments. Strict conformity to the standard time frames made it possible to plan putting into operation capacities for the 5-year plan that were larger by a factor of 2.5 than those that had actually been put into operation in the 11th 5-Year Plan. The development of new mines, pits and concentrating mills will be begun.

Taking into consideration the special significance of machine building for the re-equipping of the mines with new productive equipment and for the acceleration of technological progress, the volume of capital investments allotted for the development of coal machinery plants has been increased in comparison with the 11th 5-Year Plan by a factor of 1.8.

The basis for increasing the efficiency of the sector's operation and for ensuring the requirements of the national economy for fuel with minimum

expenditures for labor and material expenses in the 12th 5-Year Plan and in subsequent periods is the acceleration of scientific and technical progress, the introduction of new schemes for the opening up and developing of mine fields and extraction districts and the development and introduction of highly productive automated and robot-controlled equipment. A great deal of attention is being paid to the complete mechanization of all the technological processes for mining coal--from the breakage face to the loading of fuel on the surface.

The plan for the current 5-year plan provided for the widespread introduction of new and more improved mechanized complexes for the differing mining equipment conditions. There are the KM-103 and KD-5D for thin seams with gentle dips, the production of which had been begun in the latter years of the preceding 5-year plan; and the ANShch and AK-3 units for working steeply sloping seams (here the miners' work is most difficult). Provision has been made for the modernization and production of improved types of KMT and OKP-70 supports for seams with hard-to-control roofs.

A great deal of attention is being paid to the complete mechanization of all the processes, especially of underground workings, where the proportion of combine passage amounts to no less than 50 percent. Plans have been made for chemical reinforcement of the roof rock and for the use of new types of metal supports with increased load-bearing capacity and so on. At open workings, there will be further development of an efficient non-transport system for moving the coal using high-capacity draglines with a bucket capacity of up to 100 cubic meters and a boom up to 100-120 meters long and high-capacity walking excavators with a shovel capacity of from 40 to 125 cubic meters.

At the Vostochnyy pit in Ekibastuz and the Berezovskiy pit in the Kansk-Achinsk Basin, use will be made of the flow-line technology for mining coal using bucket-wheel excavators and units with belt conveyers with an output of more than 5,000 cubic meters per hour. Nearly half of all mining in the pits will be accomplished using continuous-operation equipment.

At the concentrating mills, plans have been made for the further improvement of the technology and the introduction of highly productive equipment with automated control systems. There will be an increase in the concentration of large- and medium-grade coal in mineral suspensions. High-capacity dense-medium separators will be introduced which will have a vertical wheel with an output of up to 500 metric tons per hour, as well as "fluidized-bed" dryers and disk and belt vacuum filters suitable for dehydration of slurry and filtration tailings. In order to reduce losses, plans have been made for reprocessing nearly 10 million metric tons of coal-bearing rock and extracting up to 2.5 million metric tons of coal. In order to stabilize the quality of the coal fuel supplied to the power stations, the introduction of homogenizing units has begun.

In coal machine building, plans have been made to introduce 25 flexible production systems, 155 automatic N/C manipulators, 115 balanced manipulators, 48 flow-line and 22 automated lines, which should accelerate the exploitation of the production of new equipment, which is extremely necessary for the coal mines, and to improve the quality of the produced machines and equipment.

The implementation of the intended measures for acceleration of scientific and technical progress in the sector will make it possible to ensure in the 12th 5-Year Plan the growth of coal mining and the output of other types of products entirely through an increase in labor productivity.

A positive influence on the work of the sector will turn out to be the transition as of January 1, 1987, to the new management conditions, which provide for enhancement of the role and the responsibility of the associations' and enterprises' collectives in the solution of production and control matters, in the development and realization of plans and in the improvement of the workers' labor and domestic conditions. The basis for the evaluation of the enterprises' operation has become the 100-percent fulfillment of the plan for the delivery of production in accordance with contracts and orders. The improvement of the sector's planning is continuing. Already, beginning with the 1987 plan, the number of maintained indices has been reduced by more than 40 percent. In the coal mining plan, only the indices for the total volume, with isolation of the Donetsk and Kuznetsk coal, including the coking coal, and the output of concentrate at the concentrating mills, including the concentrate for coking, are being maintained. The mining plans for the remaining coal are being determined by the ministry in agreement with the consumers and the supply and sales organs.

The number of maintained indices have also been reduced in other sections of the plan. In the indices of the labor plan for 1987, only the growth in labor productivity and the general fund for wages on the whole for the ministry have been maintained, and in the plan for production costs--the maximum level of expenses per 1 ruble of goods production and the industry's profit.

The procedure for planning capital construction has been changed, providing for expansion of the enterprises' rights to use the production development fund. In 1987, all work on re-equipping, renovation and maintenance of the enterprises' existing capacities is being accomplished using the production development fund. In connection with the fact that special significance is being attached to improving the quality of the coal, beginning with 1987, the ash content of the mined coal is being certified (on an estimated basis) to the USSR Ministry of the Coal Industry.

For the 12th 5-Year Plan, the USSR Ministry of the Coal Industry has received approval of the standards for the generation of the material incentive, social and cultural measures and housing construction funds, the production development fund, the united science and technology development fund and the fund for research work expenses. Industry's transition to the new management conditions foreordains the enhancement of the role of the 5-year plans and the widespread use of stable standards. Taking into account the specific character of the sector in the annual plan, standards have been approved for the transfers of profit into the ministry's budget and financial reserve. The ministry has been granted the right to differentiate these standards in accordance with the operating conditions of the associations and enterprises.

The new management conditions in the coal industry differ from those in other sectors, which is associated with the series of sectorial peculiarities. The

mines and pits, having exploited production capacities, operate at a stable level with, for all practical purposes, an unchanging or very insignificantly changing production volume; a specific portion of the mines reduces the production volumes because of the exhaustion of the reserves or the transition to low-capacity seams, and newly operational or renovated enterprises increase the production volumes. Under these conditions, it is not considered feasible to use the standards for determining the indices of the annual plan for comparison with the base year. Taking this into account, in the coal industry basic standards have been adopted which deviate from the indices approved in the 5-year plan. In order to fix the material incentive fund during the elaboration of the 5-year plan, a per-ton rate (from 41.8 to 45.33 kopecks, differentiated according to years) was adopted for each ton of the total output (coal plus concentrate plus shale plus bricks). In the annual plan, the material incentive fund is generated according to the approved standard for the volume established in the 5-year plan for the total output and the amount of increase (decrease) of the fund, calculated according to the approved per-ton rate, increased by a factor of 1.5 for an increase (decrease) in the output volume in comparison with the 5-year plan.

The social and cultural measures and housing construction fund is generated according to established standards (35-40 percent) from the total of the material incentive fund. Similarly, in conformity with the deviations of the volume from that envisioned in the 5-year plan, the wage fund is also fixed according to approved standards. The indicated position of the economic mechanism significantly enhances the role of the 5-year plan and requires special thoroughness during its elaboration.

In 1986, as an experiment, the Krasnoarmeyskugol [Krasnoarmeysk Coal], Gukovugol [Gukovo Coal] and Intaugol [Inta Coal] coal mining associations were changed over to the new management conditions. The results of these associations' operations were higher than average for the ministry. Order and contract deliveries of coal were fulfilled completely. Due to the above-plan profit, the economic stimulation funds were significantly supplemented.

Together with this, the transition of the sector's enterprises to the new management conditions generated a number of problems that had previously not come forth. This concerns, first of all, the generation and use of the production development fund. The decision about financing all work for renovation, re-equipping and maintenance of existing capacities (enterprises) in the coal industry using the assets of the production development fund required a review of the previously approved standards.

The standards were reviewed in conformity with the capital investments provided for in the 5-year plan for these purposes on the whole for the USSR Ministry of the Coal Industry. However, during the calculation of the differentiated standards for generating the production development fund according to the associations and enterprises, complications arose. In individual associations, with the transfer of the entire amortization and all the available remnant of the profit into the production development fund, these assets turned out to be inadequate for completion of the work on the renovation, re-equipping and maintenance of the enterprises. For example, the Sredazugol [Central Asia Coal] Association was short 15 million rubles,

Artemugol--23.4 million rubles, Lisichanskugol [Lisichansk Coal]--10 million rubles, and so on. At the same time, in individual associations it turned out that there were available assets. By a special decision of the Commission for Improvement of Control, Planning and the Economic Mechanism, in 1987 permission was given to centralize a portion of the amortization assets intended for the complete renewal of fixed capital and directed into the production development fund, in order to render assistance to associations with inadequate amounts of these assets. But this decision has been adopted as an exception only for one year. The matter requires further discussion. It is considered advisable to permit in the coal industry capital-intensive renovations (perhaps, in accordance with a list agreed to by USSR Gosplan) financed using centralized state capital investments. Also in need of discussion is the matter of the generation of a centralized production development fund in the USSR Ministry of the Coal Industry similar to other economic stimulation funds.

No less complicated is the problem of the changeover of the coal industry's enterprises to completely self-support [samokupayemost] and self-financing. The existing wholesale prices are unprofitable for the coal industry. In order to establish conditions for self-support for the enterprises, since 1986, accounting prices have been introduced which ensure reimbursement of plan expenses for production and the deriving of a profit for the generation of economic stimulation funds and funds for paying off obligations. At the same time, the consumer is paying for the coal received at the wholesale price, while the coal sales organs are transferring the payment for it to the mines, pits and concentrating mills at the accounting price. The difference between the wholesale and the accounting prices is being reimbursed from the budget. The accounting price is approved by the ministry annually based on the coal mining production costs, the coal-concentration costs and the brick production costs and the profitability standards established by USSR Gosplan and the USSR Ministry of Finances. The annually approved accounting price can not be the basis for the changeover of the sector to self-financing, without even mentioning the fact that its level is inadequate.

In connection with this, it is advisable that the changeover of the sector to complete self-support and self-financing be implemented after the introduction of new wholesale prices. But even with the new increased wholesale prices, due to the large diversity in mining conditions, individual associations can turn out to be marginally profitable or even unprofitable. What is required is a detailed study and the preparation of proposals for the further improvement of all the conditions of the economic mechanism, taking into account the specific character of the sector and the preparations for its changeover to complete self-support and self-financing.

The 12th 5-Year Plan should become a turning point in the sector's development, in the ensurance of a high rate of increase in coal mining and in increasing the efficiency of the coal industry, and the work in the first year of the 12th 5-Year Plan has confirmed the reality of these tasks. Thus, the 1986 coal mining goal has been exceeded by 16.8 million metric tons, and in comparison to 1985--by 24.3 million metric tons, which is equal to the increase for the preceding 10 years. The mines and pits have operated successfully, mining coking coal. This has made it possible to ensure

completely the needs of ferrous metallurgy and the fulfillment of the export delivery obligations. Particular note must be taken of the increase in the production of large- and medium-grade types of coal for the populace (an increase of 4.2 percent).

The delivery plan, taking into account the quotas and obligations, was completed by 99.2 percent, as opposed to 96-97 percent in preceding years. The volume of construction and installation work increased and the planned capacities for mining and processing coal were put into operation. The quota for the increase in the coal miners' labor productivity was exceeded--the growth rate in comparison with 1985 amounted to 103.1 percent. In conformity with the plan, production costs were reduced and an above-plan profit (in accounting prices) of more than 285 million rubles was derived.

At the same time, not all the associations and enterprises were able to meet the plan quotas, there is a serious lag in coal machinery and the plans for the introduction of new equipment and for capital construction, particularly of projects in the social sphere and others, are not being completed. There is still a need for serious work on overcoming these negative phenomena.

The token of the sector's successful operation is the growth of the miners collectives' labor activeness. The miners have always been pioneers of progressive undertakings and leaders in getting high results.

In our times, the best traditions of the Stakhanovites of the first 5-year plans are being continued by the districts and brigades of Twice Hero of Socialist Labor M. P. Chikh (the Rostov Oblast's Mayskaya Mine), Twice Hero of Socialist Labor Ye. I. Drozdetskiy (the Kuznetsk Basin's Polosukhinskaya Mine), Hero of Socialist Labor A. A. Belik (the Samarskaya Mine) and Hero of Socialist Labor A. Ya. Kolesnikov (the Donetsk Basin's Molodogvardeysk Mine) and others.

The Soviet people are preparing to greet the 70th Anniversary of the Great October in an appropriate manner. The brigade headed by V. I. Gvozdev from the Raspadskaya Mine in the Kuznetsk Basin and the district collective headed by A. P. Potapov from the Vorgashor Mine in the Pechora Basin came forward with a patriotic initiative--to complete the plan for the 2 years of the 5-year plan by the October anniversary and ensure a significant increase in labor productivity. Their initiative has been supported by hundreds of miners brigades and districts. For the high results achieved in 1986, V. I. Gvozdev and A. P. Potapov have been awarded the title of Hero of Socialist Labor.

The socialist obligations taken on by the mine and pit collectives will make it possible to overfulfill significantly the 1987 plan as a whole for the USSR Ministry of the Coal Industry and to achieve already in this year the mining volume provided for by the 5-year plan for the year 1988. The efforts of the sector's workers have been directed towards the successful solution of this task.

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FATE OF DAUGAVPILSKAYA GES CONSTRUCTION REVIEWED

18220184 Riga SOVETSKAYA LATVIYA in Russian 9 Jul 87 p 3

[LATINFORM article: "The Fate of the Daugavpilska GES"]

[Text] An out-of-town meeting was held in Riga of the Scientific Council on Problems of the Biosphere of the USSR Academy of Sciences under the chairmanship of Hero of Socialist Labor and Academician A. F. Treshnikov. A number of aspects were reviewed of environmental protection in the Baltic and Belorussia. Much attention was devoted to the ecological, economic, and social consequences of building the Daugavpilska GES. The participation in the discussion of specialists in a variety of fields -- biologists, economists, power engineers, philosophers, dam builders, and architects -- lent the proceedings a comprehensive air.

Deputy Chairman of the Council of Ministers of the Latvian SSR and Chairman of the republic's Gosplan, M. L. Raman, and Academician V. I. Parfenov of the Belorussian Academy of Sciences reported on the views of the two governments regarding the inadvisability of building this GES on the Western Dvina -- the Daugava.

This conclusion was in complete accord with that of a major specialist in the field of economics and ecology, Professor M. Ya. Lemeshov, which was read at the meeting. It stated that: the Daugavpilska GES Construction Project was developed from a cost-is-no-object approach. It is not supported by growth of the actual peak loads in the Unified Power System of the Northwest. It does not consider alternatives for generating power, including coverage of peak loads. The project has been worked out on a low ecological-economic level and should not simply be revised, but rejected in principle.

Latvian scientists invited by the republic's government to provide additional expertise on the GES project -- Academicians R. A. Kukayn, and V. A. Shteynberg, G. P. Andrushaytis, director of the Institute of Biology of the Academy of Sciences of the Latvian SSR, and others -- reported on the conclusions of the expert commission. This included the statement that the project does not contain an integrated approach for a definite national economic effect and is far from fully considering the ecological and social factors. Just from the creation of the reservoir losses in agricultural output amount to 56.4 million

rubles. On the example of their Latvian colleagues, Belorussian scientists also carried out additional investigations (a draft was recently finished) and they also spoke at the meeting. In their estimate damages from the fact that two-thirds of the surface of the reservoir is to be in Belorussian will cost their republic about 200 million rubles. Many aspects of the updated design were criticized. The position of the representatives of Latglavenergo [Main Power Administration of the Soviet of Ministers of the Latvian SSR] and of the Gidroproyekt Institute imeni S. Ya. Zhuk was based on the assumption that the Daugavpilskaia GES would generate reserve capacity in the Northwestern Unified Power System and would cover the peak hours of the load curve.

The argument that the electric power is needed and that something has to be sacrificed was countered with the caveat -- yes, but not at any price. The specialists proposed many alternatives. At much lower cost mobile power generator units could be set up at the Berezovskaya or Lukomlskaya GRES in the Belorussian Power System (a proposal of the Belorussian government to the USSR Council of Ministers). V. A. Markov, the chairman of the working group of the Commission to Study Production Forces and Natural Resources of the USSR AN [Academy of Sciences], remarked that in today's world economy compact pumped-storage power plants are more efficient for regulating load curves. Worked-out mineral quarries can be utilized for these GAES [pumped-storage power plants]. Another resource is to utilize drops in pressure in the gas supply system by employing gas turbine expander power plants, which are already in series production. Setting up these facilities in 21 gas consuming generator units in the Baltic and Belorussia would more than cover the capacity of the Daugavpilskaia GES and would cost only one-tenth as much. B. V. Osipov, docent of RPI [Riga Polytechnic Institute], produced convincing figures that converting enterprises to a two- or three-shift operation would make it possible to reduce the maximum load on the power system. He also directed attention to the fact that our national economy loses 11 percent of generated power in the transmission lines. These losses could be reduced by developing local power sources. Today the costs of measures to economize on electric power are one-half the costs of generating and transmitting it. This is why we must put the stress on economizing on power consumption. The specialists counterposed these and many other proposals to the outmoded and inefficient construction of GES in river gorges.

After hearing and discussing all the presentations, the Scientific Council on Problems of the Biosphere came to the conclusion that the construction of the Daugavpilskaia GES is inadvisable from the economic, ecological, and social point of view. The council also adopted a resolution to request the Presidium of the USSR AN to petition the USSR State Committee for Science and Technology to set up a temporary creative collective to find alternative sources of electric power supply for the country's Northwestern Region. The Latvian scientific staff has already set up a center for problems of ecology, which will operate on the basis of economic accountability. Also being organized is a scientific training center based on three VUZes and the republic's Academy of Sciences to increase the knowledge of specialists in the field of environmental protection.

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PROBLEMS, PROSPECTS FOR ELECTRIC POWER IN GEORGIA

18220184 Tbilisi ZARYA VOSTOKA in Russian 30 May 87 pp 1+3

[GRUZINFORM article: "Georgia's Power Industry: Problems and Prospects"]

[Text] Our country possesses the largest fuel-energy complex in the world. The party and government are taking steps so that the national economy's demands for energy will be more fully met: new power plants are being built and the capacity of existing ones is being increased, and work is under way to develop new sources of energy resources. An example of the party's special concern to develop this important sector is the USSR's Energy Program and the resultant decree of the CPSU Central Committee dated 20 October 1983 on "The Development of the Electric Power Industry of the Georgian SSR in the 12th Five-Year Plan and up to the Year 2000."

Progress in implementing this decree was discussed at an expanded meeting of the bureau of the Georgian Communist Party Central Committee and the Presidium of the republic's Council of Ministers, with the participation of the leadership of the USSR Ministry of Power and Electrification.

B. D. Makharashvili, deputy chairman of the Council of Ministers of the Georgian SSR, presented a report.

Speaking at the meeting were Comrades V. I. Alavidze, O. G. Vardzelashvili, B. V. Nikolskiy, and O. Ye. Cherkeziya, sector manager of the CPSU Central Committee A. N. Marchuk, USSR First Deputy Minister of Power and Electrification A. N. Makukhin, and department manager of the Bureau of the USSR Council of Ministers for Fuel and Energy V. A. Zhmurko.

The results of the meeting were summarized by First Secretary of the Central Committee of the Georgian Communist Party D. I. Patiashvili.

It was noted that in the time elapsed since the adoption of the decree considerable work has been done to intensify implementation of the USSR's Energy Program. At the power plants making up the Gruzglavenergo [Georgian Main Power Supply Administration] system power facilities have gone into operation with a capacity of 240,000 kW, 35,000-kV power lines have been installed over a distance of 1,536 km, work has been carried out to rebuild and modernize the

equipment of the Zemo-Avchalskaya and Khramskaya GRES, construction is continuing on the Khudonskaya CES, and the Tbilisi GRES is being expanded. Provision has been made to build the Novo-Tbiliskaya GRES. The technical-economic foundation has been laid for construction of the Kutaisi GRES with a capacity of 1.8 million kW. A program is being developed and implemented to renovate or construct small electric power plants, etc.

The electric power supply for the republic's national economy and populace, despite natural disasters that have occurred here, was basically stable in the autumn-winter period.

Nevertheless, as pointed out at the meeting, the republic's power base has substantially lagged behind the planned pace of industrial development and is not meeting the growing demand for it. The stability of electric power supply to the national economy largely depends on obtaining power from adjacent power systems.

The per capita generation and consumption of electric power in Georgia is considerably below the all-union indicator. The electric supply for labor is also low. The level of electrification of agriculture does not meet today's requirements. The shortfall in the amount of marketable stocks of fuel for the populace causes increased consumption of electric power for heating purposes and decreases the reliability of the electric supply in the winter period.

The meeting pointed out a number of serious defects in the work of Gruzglavenergo (headed by Yu. E. Chediya). For example, the efficiency of the installed capacity of thermal power plants in 1986 was only 62.7 percent. The situation is no better this year. Electric power losses in transmission and relative fuel consumption exceed normative values. Water resources are permitted to be utilized in an irrational and non-integrated fashion.

The meeting raised the fundamental question of improving the state of affairs in power construction (chief of the Gruzigidroenergostroy Association M. A. Tsiskarishvili). The plan for the first four months of this year has not been fulfilled. Because of the poor quality of design and exploration work and of construction and installation work, accidents occurred at the Zhinvalskaya CES and the penstock of CES-1 and in the construction of Vartsikhe GES-4. There was criticism of the design organizations of USSR Minenergo [Ministry of Power and Electrification] and of Soyuzgidroenergostroy [not further identified], which violated established deadlines for producing technical documentation and poorly supplied the republic's dam builders with machines, equipment, and vehicles.

Depreciation of the fixed capital of the industrial construction base of Gruzgidroenergostroy is almost 70 percent and the level of supply of excavators, bulldozers, and material-handling machinery is lower than the degree of technical equipping of analogous construction organizations in USSR Minenergo. And this is not the only fault. The association's requirements are also not being met for local construction materials and rolled metal products and the

scale of investment defined in annual plans does not meet the thematic goals of the energy program.

The meeting's participants expressed concern and anxiety regarding the non-fulfillment of the plan for construction and installation work at such highly important facilities as the Ingurskaya and Khudonskaya hydroelectric power plants and the Tbilisi GRES. It was emphasized that these cannot all be ascribed to natural disasters. Construction and installation workers often fail to display the required initiative, stability, and exactingness in solving problems that arise.

A number of problems requiring immediate solution were submitted to Gosplan, Gossnab [State Committee of the USSR Council of Ministers for Material-Technical Supply], the State Committee for Science and Technology, Minstroy [Ministry of Construction], Minavtotransport [Ministry of Motor Transport], and other ministries and departments of the republic.

A considerable role was allotted to the problems of utilizing every gram of raw materials, fuel, and electric power. This approach to matters is all the more important and essential on the scale of our national economic complex, where the concept of "economizing" means the same as "multiply." It was pointed out that the republic has accumulated decided experience on managing the processes of consuming and economizing on electric power. Nevertheless, a number of enterprises systematically permit consumption in excess of its standardized level. For example, at the Rustavi Metallurgical Plant the relative cost of electric power to produce agglomerate is 86 percent higher than the average sector costs for electricity, and at the Azot Production Association costs to produce one ton of synthetic ammonia are 2.2 times greater than the country average.

At certain enterprises they have set up exaggerated norms for the consumption of electric power per unit of output, and thus the economies realized are actually fictitious. In 1986, for example, the Tskhinvali Elektrovibromashina Plant "saved" 280,000 kWh, the Akhmeta Biochemical Plant -- 1,000 kWh, and the Batumi Electrical Equipment Plant -- 18 percent of its total consumption of electricity. What is this if not deception and falsification? Among the enterprises that are wastefully consuming electric power we may mention the Poti Plant for Electric Motor Amplifiers, the Batumi Plant for Household Machine Building, the Tbilisi Machine Tool Building Association, and others. The organization of technical monitoring of the consumption of energy resources is too low. At several enterprises, including major ones, instead of scientifically based norms they have empirical-statistical, i.e., average approximate, norms, and there are not enough electric meters. It was pointed out that the organs of Gosenergoadzor [State Inspection for Industrial Power Engineering and for Power Engineering Supervision] should step up the campaign against wastefulness and extravagance and that saving energy is everyone's duty.

The meeting called for increased attention to be paid to the development of non-traditional types of energy and especially of solar and wind energy, which

can produce a high economic effect in the national economy, and finally, to convert the tests and experiments that have been going on for years to broad-scale practical operations.

The issues were also raised of launching the construction of new housing and cultural-domestic facilities for power energy workers and engineers, and of intensifying organizational and political indoctrination work in the light of the growing requirements inspired by restructuring and acceleration.

The meeting also pointed out that the obkoms, gorkoms, and raykoms of the Georgian Communist Party, the Councils of Ministers of the Abkhaz ASSR and the Adzhar ASSR, the ispolkoms of the Soviets of Peoples Deputies of the South Osetian AO [autonomous oblast] and of the republics' cities and rayons must take exhaustive steps to ensure the timely and unconditional fulfillment of the program to develop Georgia's electric power industry.

The expanded meeting adopted a resolution aimed at further developing the republic's electric power system and ensuring a reliable supply of electricity for its national economic complex.

12697

CSO: 1812-181

BRIEFS

TURBINE EQUIPMENT INSTALLED--Shulbinsk (Semipalatinsk Oblast)--Construction workers of the Shulbinsk CES have begun to install the hydroelectric power equipment of the first turbine. The units' rotor was assembled at the construction site and installed at the operations site with the aid of an overhead crane. All the large-scale components are being installed by this technology. The quality of the work is being improved thereby. [Text] [18220184 Moscow SELSKAYA ZHIZN in Russian 12 Jul 87 p1] 12697

DUKOVANY GENERATOR TESTS--Prague--A 144-hour program of complex testing has been successfully carried out at the fourth generator unit of the Dukovany Nuclear Plant. Complete functional reliability was established at the nominal capacity of 447.33 MW, which is 15.33 MW higher than the capacity provided in the design. This is the highest indicator attained by VVER-440 power generators. The fourth Dukovany generator unit has now shifted to six months of testing. [By IZVESTIYA correspondent L. Kornilov] [Text] [18220184 Moscow IZVESTIYA in Russian 23 Jul 87 p 4] 12697

NUCLEAR PLANT TRAINING--5 Apr--USSR First Deputy Minister for Nuclear Power L. Voronin has reported that the critical remarks contained in the article "Inertia of Rest" are admittedly timely and correct. The nuclear power industry has permitted a delay in the development of training devices and of an effective system of training and instructing the personnel of nuclear power plants. The questions raised in the article were examined in detail at a meeting of the collegium of the USSR Ministry of Nuclear Power. The collegium outlined a program of work to accelerate the incorporation of trainers built by the Novo-Voronezh and Smolensk educational and training centers and to develop new trainers of various types and designations, and it has issued the appropriate orders to the All-Union Atomenergoprojekt Scientific Research Institute, to the Atomenergoplakta Production Association, and to the directors of main administrations, including orders to fully staff by 1 August 1987 the Novo-Voronezh and Smolensk educational and training centers with instructors and to certify those personnel. The personnel administrations of educational establishments and of educational and training centers have been given the assignment of assisting the centers mentioned in selecting and dispatching highly qualified specialists of nuclear power plants to work as instructors at educational and training centers. Measures were prepared to develop networks of educational and training centers and posts and to radically improve the training of personnel in the nuclear power industry, which provide for accelerating the development of a number of these centers. [Text] [18220184 Moscow PRAVDA in Russian 3 Jul 87 p 3] 12697

IMPROVING RURAL POWER SUPPLY--After reviewing the article "Short Circuit," published in SELSKAYA ZHIZN on 7 Mar 87, the UkrSSR Ministry of Power and Electrification believes that a serious situation has really developed in the republic regarding the technical status of rural electrification networks with 10-0.4 kW of voltage. The balance consists of 65,000 km of electric power

networks that have become unserviceable and in need of complete overhaul. This situation has developed because in the period of all-out electrification of kolkhozes and sovkhozes the networks were equipped with untreated or poorly treated wood. This has led to early massive deterioration of the poles. The Republic has developed and approved a "Long-Term Integrated Plan to Improve the Reliability of the Electric Supply to Rural Consumers in the 12th Five-Year Plan and up to the Year 2000," which provides for increasing the volume of renovating and building replacements for electric power networks that have become unserviceable. As for the specific technical status of the Zarya Kolkhoz, the 10/0.4-kW transformer substation at the central farm has been replaced. The ministry has ordered the Dneproenergo Production Association to prepare planning estimates for constructing electric power networks as replacements for those that are unserviceable and to include these in the construction plan for 1989. [By N. Magda, deputy minister of the USSR Ministry of Power and Electrification] [Text] [18220184 Moscow SELSKAYA IZBEN in Russian 14 Jul 87 p 2] 12697

ELECTRICITY FROM WAVES--The sea-wave electric power plant anchored not far from Makhachkala has generated current. The USSR's first wave power plant was designed and produced by residents of Makhachkala along with scientists from the Moscow Power Scientific Research Institute imeni G. M. Krzhizhanovskiy. "Its capacity is not very large -- 3 kW," said A. Ibragimov, director of the laboratory of the Dagestan Branch of that institute. It is, so to speak, the first step toward future industrial marine plants. This is the principle of it. Two anchors of 3 tons each hold a five-meter steel pancake-shaped platform under water. Erected above it is a buoy three-and-a-half meters tall. The height of the whole plant is 10 meters. Under the impact of the waves the buoy slides up and down along the rod, serving as the piston of a pump. Jets of water activate a turbogenerator... The principle is obviously simple and reliable. The main thing is that the system is not subject to the destructive impact of storm waves and it can also operate even with minimal wave formation -- down to 1 meter. These facilities are needed by oil field workers developing the shelf and by fishermen; and their energy can be used to desalinate seawater. They are splendid aides to offshore geological crews and the inhabitants of settlements and fishing sharks and they are reliable sources for beacons and signal buoys -- that is, they can be used everywhere that it is impossible or difficult to run LEP [electric power transmission lines] and where diesel facilities have been used to date. [By IZVESTIYA correspondent A. Kazikhanov] [Text] [18220184 Moscow IZVESTIYA in Russian 21 Jul 87 p 1] 12697

CSO: 18220184

GROWTH OF IRKUTSK, OTHER NORTHERN CITIES DESCRIBED

Moscow PLANOVYE KHOZYAYSTVO in Russian No 7, Jul 87 pp 96-100

[Article by A. Kotsar, deputy chairman of the Irkutsk Gorispolkom and chairman of the City Planning Commission]

[Text] The economy of a major city is an integral part of the national economy as a whole. The formation, operation, and development of large urban economies therefore evolve under the influence of a diverse system of functionally interrelated factors, whether all-Union, industry-wide or regional in nature. Among them the regional system has a special function with its own particular territory and specific development of social and economic factors within it.

Irkutsk is one of the oldest cities of Russia. Last year it observed a remarkable anniversary, the tercentenary of its establishment as a city, for which it was awarded the Order of the October Revolution. Today it is a major industrial center, the production volume of which is worth almost 1.5 billion rubles, with dozens of industrial enterprises in transport and communications as well as building organizations under union, republic and local control. The city is subdivided into five administrative rayons. Its territory, which includes 300,000 hectares of residential housing, comprises a total area of 8 million meters. It is a cultural and scientific center, possessing nine institutes belonging to the Eastern Siberian branch of the USSR Academy of Sciences Siberian Department as well as 32 scientific research centers, design institutes, and other organizations.

Despite their numerous limitations, the major cities are continuing to grow and their population density is increasing. New industries continue to be established in their territories. The decisive factor in this respect from the standpoint of local authorities is, as a rule, the desire to attract through departmental builders supplementary capital investments and the resources for overcoming already existing disproportions in the development of the urban economy. In fact, however, the contradictions between industrial development and public services often become still more strained. Instances of a departmental approach are commonplace. Several years ago in Leninskiy Rayon in the city, for example, a group of enterprises were set up that have since grown into large-scale industrial collectives. Here, problems of social, domestic, and cultural construction have become extremely acute.

Personel turnover here is high since a third of the workers are in need of housing, and there is also a shortage of institutions for pre-school-age children, of polyclinics, and of hospitals. There is no palace of culture, no recreational facility, no sports complex. There is no subsidiary farming. Furthermore, in the rayon where this industrial center is situated there is a shortage of heat, of drinking water, of telephone communication lines, and an inadequate network of roads. All this has come about because the ministries cannot reach agreement on what to build and when and for whom to build it.

Exerting a strong influence on the population density of major cities is a large proportion of manual laborers, comprising almost 50 percent of the labor force in Irkutsk. This situation gives rise to a shortage of labor resources that is in many respects deceptive inasmuch as the demand for additional labor in such numerous, relatively unattractive places on the part of the urban population (with its relatively high cultural and educational level and interests) is steadily declining. Hence there is a continuing demand by the major cities for an influx of labor resources from the outside, provided for the most part by the populations of small cities and agricultural localities. The number of jobs for workers in the major cities is increasing even with the renovation and technical reequipping of production; for often instead of completely replacing obsolete equipment new equipment is put into operation additionally. Thus the removal of old machines and equipment in the industry of Irkutsk in 1985 amounted to 1.7 percent of the value of its fixed assets, whereas the introduction of new equipment amounted to 10.6 percent. The fact that the bulk of new equipment produced in the country now goes to add to the machine inventory rather than to replace existing equipment gives grounds for the assertion that the renovation mechanism, as it is operating, is not helping to limit the growth of the major cities.

The caliber of social and domestic services encourages an influx of settlers, and in spite of the ecological problems among the settlers are those of pension age. The proportion of pensioners in the population profile of the major cities exceeds the average for the country as a whole, as it does the indicators for outlying areas. In Irkutsk, for example, the percentage of pensioners is 11.6, whereas for Irkutsk Oblast as a whole it is 9.9 percent.

A major impact on the development of Irkutsk is attributable to the extremes of natural climatic conditions and higher than normal occurrence of earthquakes, entailing costly construction of housing, increased labor and material expenditures, reduced reliability in the functioning of the city's economy, and increased difficulty in operating it. For example, a square meter of living space in Irkutsk costs 20 percent more than it does in Novosibirsk. Housing and social and domestic projects in Irkutsk must be built according to individual, custom-made blueprints. Site analysis of standard projects with due regard for the regional characteristics of Irkutsk is beyond the capacities of the Irkutsk Oblast site planning

commission, and the RSFSR Civil Engineering Administration, which is called upon for standard designing, for many years has declined to resolve this problem.

To review problems of managing the urban economy a specific, historical approach must be taken. It must be borne in mind that the development of the economy of Irkutsk began over 300 years ago, hence the large amount of dilapidated and hazardous housing, the necessity of rebuilding areas of old construction, and the lag in developing utility service lines, etc.

It is common knowledge that the spur to industrial development was provided during the period of the Great War of the Fatherland when many plants were evacuated to the East. But the objective causal factors for the development of the economy in those years at the expense of the social infrastructure are not completely understood. It was not possible in the post-war years to make the transition to the comprehensive development of Siberian cities since the national economy was in ruins and had to be reconstructed. Only in the 1950's did a broad-based program of accelerated development begin in Siberia, stimulating the birth of new while enlarging the old cities. In regions of Siberia a powerful industrial capacity together with a comparatively well-developed social and domestic infrastructure began to be established. Nevertheless, a key factor must be taken into consideration--the limited nature of the area's developed natural resources.

The construction of the top-priority Irkutsk GES during the period 1950-1958 had a major influence on the economic development of Irkutsk. It was the prototype of a cascade of hydroelectric power projects on the Angara River, bringing a fresh influx of skilled labor and encouraging the growth of the construction base. It did not, however, bring about the accelerated growth of the urban economy. The kind of approach taken in past years to the solution of the problem did not permit the balanced development of industry and public services for the city. Almost a quarter of a century was required to eliminate the "temporary" housing and living areas provided for the hydropower workers. All of this testifies once again to the necessity of varying the approach taken, both centrally and locally, to the distribution of capital investments in the development of urban economies.

It is important to identify yet another factor complicating the management of large-city economies. Big cities nowadays find themselves in a state of strenuous tension as a result of a contradiction between industrial and territorial efforts. This tension exists because the industry in question is responsible for carrying out a single scientific and technical policy and for attainment of full satisfaction of social needs for production at the least expense. Hence the urge of many managers to come to a city ready to tackle every problem before bothering with the social and domestic infrastructure. Territorial organs of state power and administration, however, are responsible for the overall social and economic development of a given territory, which depend on specific concern for the people, their needs and demands. But there is a shortage of material and financial resources under the existing system of distributing them in a given territory, as a result of which there is an ongoing need to "beat" the industries out of their resources.

The economy of a large city cannot be at its best if it is organized and developed along departmental lines. The large-city economy of today is broken up into independent parts along vertical lines, effectively deprived of horizontal inter-industry relations. It is sufficient to say that half of the water lines and sewers, the heating and electrical supply lines are under the jurisdiction of different departments at the ministerial level.

There is a pressing need for working out scientifically (and with due regard for the changing conditions and a more long-term perspective) new concepts for the systematic management of the process of the formation, functioning, and continued development of large cities. On the basis of current urban planning theory a development program has been conceived for Irkutsk as the nucleus of an urban cluster during the period between the present and the year 2000.

A program for long-term development of the economy of Irkutsk in the period of the 12th Five-Year Plan and a more long-term perspective has set specific tasks for achieving the balanced development of the urban economy, for creating the necessary material and technical conditions to support its normal operation, and for establishing an efficient administrative structure. Undertaking such a program has been occasioned by the very difficult circumstances in which the economy of Irkutsk finds itself: a large amount of dilapidated, hazardous housing; more than 40,000 families in need of better housing conditions; more than 100 kilometers of utility lines in a risky condition, as well as underground residential heating facilities and supply lines serving an area greater than 300 hectares; and a serious lag in providing the material support for public education, public health, public catering, trade, and domestic services.

Substantial assistance is being provided to overcome this situation. Let it suffice to say that the volume of capital investment in construction engineering will be increased by a factor of 1.4. One and a half million square meters of housing will be built; plus 7 general education schools designed for 9,500 students; hospitals with beds for 1,500 patients; out-patient clinics for 2,000 workers per shift; 2 self-service stores, each with 1,200 square meters of space; 5 modern domestic service centers; a music auditorium holding 1,000; 3 houses of culture, each holding 800; 3,600-seat moviehouses; an oblast library with a collection of 3 million books; 25 kilometers of trolley lines; a bus station accommodating 500 passengers. The main thing that remains to be done, however, is to speed up development of municipal services and thermal power: specifically, boosting the capacity of the Novoirkutsk TETs; restoring 27 kilometers of existing thermal power lines and building 21 kilometers of new ones; building 77 kilometers of main water lines and 70 kilometers of sewer lines; stepping up work on the water supply system; and building 5 warehouses for the municipality.

All this will result in a major step forward in the city's development. The consequences, however, of an uncoordinated approach to solving the economic and social problems of the city over so many years have resulted in such a serious lag that it will not be until 1991, according to basic indicators of

public welfare, that the city of Irkutsk approaches the average for the RSFSR as of 1 January 1985.

With the passage in 1986 of the decree of the CPSU Central Committee and the USSR Council of Ministers "On Ways to Increase the Role of the Soviets of People's Deputies and to Strengthen Their Responsibility in Accelerating Social and Economic Progress in View of Decisions by the 27th CPSU Congress," there is a broader range of problems for the resolution of which the soviets now have specific authority, particularly with respect to combining the resources and efforts of the enterprises in their territories for a comprehensive economic solution to the industrial and social problems of the regions.

The powerful base of the building industry serves as the foundation for the integrated development of large-city economies. The building resources in Irkutsk, however, are in an unsatisfactory state. Glavvostoksibstroy [the Main Administration for Construction in Eastern Siberia] repeatedly fails to fully assimilate the capital investment funds earmarked for the city and will not accept responsibility for them. For this reason alone about 20 million rubles designated for the city were not utilized in 1985. The Main Administration worked out and approved a series of measures for the rapid growth of industrial resources in Irkutsk. But they have not been fully implemented. After coming to an agreement over the volume of work called for in the building program, Glavvostoksibstroy even to this day refuses to include in the plan construction of a significant part of the residential housing, schools, kindergartens, hospitals, and facilities for trade and public domestic services. It is the duty of the city authorities and of the local soviets to support demands by the managers of the building organizations for fulfilling the plans for residential and public service construction, and that the building projects of the local soviets for carrying out the party's social program be given top priority.

A resolution has been passed putting thermal energy projects in Irkutsk under the specialized management of BratskGESstroy [the Bratsk GES Construction Commission]. Measures are being taken to strengthen and ensure the material resources of organizations doing construction work with economically justified methods. Party and soviet organs have taken under their special supervision matters pertaining to the improvement of labor conditions and worker daily life, of raising the prestige of this profession, and bringing up to strength the ranks of skilled workers in these organizations. Communists and Komsomol members are volunteering as shock workers at key projects. The development of the requisite estimate and design documentation is currently being handled not only by the Irkutsk Civil Engineering Design Institute but with the participation of other design organizations. Measures are being taken to radically improve service work in the city by a single contractor. Admittedly, the city's economy cannot be integrated if a lot of contractors are involved in a building project. But this does not mean that a single contractor must be the only one managing capital construction for the gorispolkom. In the case of Irkutsk, for example, under existing conditions of labor pay and the level of developing the material and storage base, out of 44 customers it is expedient to keep independent such as the management of the Eastern Siberian Railroad, the Eastern Siberian affiliate of the USSR

Academy of Sciences Siberian Department, and the plants (aviation, heavy machine-tool building imeni V. V. Kuybyshev, and radios imeni 50 Letiya USSR). The same thing is true with respect to construction using economically justified methods. If today, for example, the administration of roads should be deprived of the right of independence, the city would lose a good deal. Experience bears out the fact that both the general contract and economically justified methods should be utilized within prescribed limits. To put it another way: Who should be empowered to carry out this construction work and for how long? First of all, it seems to me, the client who can guarantee to perform the construction with his own skilled labor, making broad use of working simultaneously at more than one project.

In compliance with the resolution already referred to, the shared responsibility of enterprises and associations for developing through their construction capacities the manufacture of building materials constitutes one of the most important aspects of coordination of efforts by the soviets of people's deputies. This will make possible the broader use of economically justified methods of construction.

The integrated management of a large-city economy requires a well-coordinated system of material and technical supply, which is already being developed. Providing a guaranty to building projects for materials is of special importance. In the final account the direction and limitations of the flow of materials should be determined not by managers or by transport but by the supply organs, which are capable of doing this more effectively while assuming the full responsibility. Once again, however, departmentalism is obstructing this work. It is apparent that Glavvostoksbstroy and USSR Gosnab's Eastern Siberian main administration will not be able to come to an agreement regarding the conversion of the city's construction projects to guaranteed security in terms of materials without authoritative arbitration.

One of the basic reasons for the lack of balance in Irkutsk is obviously the inadequate provision over many years for developing the municipality. Capital investment for cities must be set aside on the basis of strict standards, and then the necessity of passing decrees for the development of the economies of various cities will dissipate. When placing new industries in clusters, the financial estimates of new projects should allow for capital investments to develop the municipal centers of these clusters of large cities, and on a scale that is adequate to provide for new projects. The most important of the conditions for integration nevertheless is knowing how to arrange things in such a way that capital investment in the municipal administrations is assimilated.

Developing an efficient organization of the city economy's management structure is of major significance. In the large cities it tends to be extremely conservative, unfinished, and inflexible. It is not so much a matter of numerically increasing the makeup of the city and rayon ispolkoms as it is of the integrated resolution of the problem of optimizing the administrative structure of large-city government as a whole. The small administrative units of the ispolkoms are not in a position to exert an influence on this matter.

A complete management structure should be established on the principle of a correct choice of a primary unit in relation to which the entire management hierarchy is economically justifiable but nevertheless superstructure. For large cities the choice of a primary unit is at three levels--oblast, metropolitan, and rayon in the city. Each of them has its own function to perform so that the best results of their joint effort may be attained with the least expenditure of labor. At the level of the economy of cities it is expedient to have inter-industry and inter-management territorial and industrial formations for managing passenger transport, communications, trade, public catering, public domestic services, and public utilities for water, heat, and electricity. In the urban rayons it is expedient to form industrial groups to manage trade, public catering, housing and utilities associations, public hygiene centers, housing construction associations, garage cooperatives, and administrative inspection systems.

A rather difficult task is finding the best way to regulate relations between the gorispolkom and the rayispolkoms of large cities. They should be based, while preserving the vertical structure of priority decisions, upon a rational distribution between them of rights and responsibility and agreed-upon interaction, so that duplication would be avoided and each group would be occupied with its own work.

Large-city rayispolkoms are commonly known to lack authority inasmuch as power is possessed by whoever has a skilled work force at his disposal, can provide incentives for their labor, and has control over material supplies and resources. The creation in the rayons of inter-industry municipal service associations as a way of forming functional trusts for housing, rayon municipal services, road maintenance, or municipal service and utilities combines would facilitate matters. These associations would provide a single material supply source for the management of housing maintenance and repair, mechanized units and technical equipment, and emergency services, which could be created in a short period of time.

An analysis of experience gained in managing the economies of large cities confirms the fact that in working out a general scheme for administrating the various industries, a narrow departmental approach predominates within the administrative structure with respect to choosing the primary unit. This is particularly true of municipal services and utilities. Many of the oblast organizations of the RSFSR Ministry of Housing and Municipal Services (including Oblbodokanal, Oblzhilobyedineniya, and Oblkommunteploenergo), in our view, cannot make any claim to the role of a primary unit; they serve to reinforce the distance between departments and complicate economic management.

Also unjustifiable is the lack of coordination on the part of the administrative structure occurring in a range of city services, especially in the area of domestic services. In Irkutsk a municipal agency for the management of domestic services is non-existent. In Novosibirsk it is subsidized from the local budget. In Krasnoyarsk municipal management is maintained by RSFSR Minbyt [the Ministry of Consumer Services]; in Tomsk by the city's industrial administration; and in Yaroslavl by the city's industrial association. We are dealing with this problem by leaving the choice up to the city industrial

association. But RFSFR Minbyt, in our view, has adequate scientific resources to establish and circulate in a planned systematic way the optimum administrative structure for managing an industry in a large city with proper allowance for its special character.

It is necessary to involve labor collectives more actively in the solution of general urban problems. Owing to a weakness in the repair base, for example, the technical condition of the vehicles at a special motor transport organization for removing the city's domestic waste was extremely unsatisfactory. The gorispolkom was forced to request special assistance from a number of enterprises. The municipal administration of large cities is becoming more and more industrialized, as a result of which there is a growing need for industrial methods of operation, for which there is a corresponding need for a system of material and technical supply. Would it not be worthwhile to establish it for all purposes within the system of local soviets? The enormously productive potential of large cities makes it possible to resolve such a problem without incurring any business losses. It is necessary only to add an organizational foundation and amend the legal regulations of the management mechanism. It is submitted that with due regard for the special character of production in large cities and regionally a system should be established whereby manufacturing output and work fulfillment related to the operation of the urban economy should be included in the plan and counted as production collectives.

A scientific approach is required to the management of large-city economies, together with research and experimentation. There is no provision in the law governing rayon and urban rayon soviets of peoples' deputies for the financing of scientific research work in improving the administration of urban economies. The computer age and era of the scientific organization of labor has least of all touched upon the administrative apparatus of the city and urban rayon ispolkoms. Here are to be found obsolete bookkeeping practices along with uncomfortable furniture, inadequate equipment, and disadvantageous accommodations.

In reorganizing the style and methods of their work to adapt to the new conditions, the CPSU gorkom buro in Irkutsk and the Irkutsk gorispolkom passed a resolution to establish in the oblast center a municipal inter-departmental scientific research laboratory, the principal purpose of which is to combine the forces of the Eastern Siberian branch of the USSR Academy of Sciences Siberian Department, the VUZ's, the industrial sector scientific research and design organizations, as well as the production collectives, to promote the efficient economic and social development of the city and the carrying out of key tasks as they pertain to science and technology. The laboratory is to function under the CPSU gorkom and gorispolkom through the facilities of the Irkutsk Institute for the Study of the National Economy. Directing its operations will be a scientific coordinating council consisting of party, soviet and administrative leaders, scholars, and specialists. The coordinating council will operate as a committee of the Council on Economic and Social Development for the Acceleration of Scientific and Technical progress attached to the CPSU gorkom.

The planning agencies should also be strengthened. Planning and financial organs of the city and urban rayon ispolkoms in their completed form should have at their disposal an up-to-date mechanism for attracting funds for integrated urban development of cities, including through profits and enterprise incentive funds. The city and rayon planning commissions should in fact lend support to the soviets in increasing their role in industrial construction. But in order to do this they must be equipped fully by RSFSR Gosplan with respect to methods needed to perform these functions; the local authorities must overcome a well-known tendency to underevaluate the functions of the planning commissions, and they must relieve them of work that is not properly within their jurisdiction.

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NEW MINISTER OF CIVIL AVIATION RESPONDS TO CRITICISMS

Moscow IZVESTIYA in Russian 2 Aug 87 p 2

[Interview with Aleksandr Nikitovich Volkov, USSR minister of civil aviation, by IZVESTIYA correspondent V. Kovalevskiy: "We Have to Gain Altitude"; first four paragraphs are editorial introduction]

[Text] Nearly all of us are Aeroflot passengers. And even if we are not passengers, one way or another we make use of the services of the department which ships the freight, helps to cultivate the fields, and performs many different types of operations--from patrolling the highways to putting out forest fires.

For many years and decades Aeroflot has been our pride, a model, in its way, of order, service, and quality of maintenance. We have become accustomed to this, and this has been taken for granted. And somehow, Aeroflot has surrounded itself gradually and inconspicuously with a halo of inaccessibility and immunity. Where has this led? We saw everything distinctly after the restructuring that was begun in the country: behind Aeroflot's attractive mask an entire sea of problems had accumulated--economic, social and moral.

Articles sharply criticizing the state of affairs in the sector have appeared in many central newspapers, including IZVESTIYA. Judging by the mail the editorial staff has been receiving lately, Aeroflot employees themselves, especially the pilots, also believe that changes are needed, and decisive ones, aimed both at improving the Ministry of Civil Aviation's economic activity and normalizing the microclimate in the sector.

At the beginning of May, Aleksandr Nikitovich Volkov became the new head of the USSR Ministry of Civil Aviation. He responds to an IZVESTIYA correspondent's questions today.

[Question] Aleksandr Nikitovich, about 3 months have passed since you assumed the position of minister. We realize that it is difficult to study all the problems, and especially to resolve them, in such a short time. But your first impressions and observations have already emerged, of course. What are they? Has your conception of the sector changed from what it was before your appointment?

[Answer] As it turned out, I overestimated the scope of certain problems and underestimated the scope of others. But life gradually puts all things in their places. A natural process takes place when you begin to be really palpably aware of your new work and see your place in it. Incidentally, the work is not so new for me--I have been connected with military aviation all my life, and this is civil aviation, its sister...

[Question] What are the most important problems in your view, the ones that are of vital importance?

[Answer] Fuel. This is the problem of problems. The shortage of it does not permit us to efficiently utilize the fleet of aircraft available with a full workload. If we had enough fuel at our disposal now, we could increase the number of passengers carried by 10 to 15 percent. But there is not enough fuel, and for this reason roughly 15 million persons turn out to be in the "scissors" between supply and demand every year.

The fuel shortage is also reflected in another aspect of our life--the social one. It is common knowledge that a pilot's salary is basically for the flying time accrued. There are definite flaws in a system such as this, but while it exists, it works. And it turns out that the pilot receives less if the aircraft is grounded.

We are attempting to prove the urgency of the fuel problem to the Gosplan. I realize that the Gosplan's capabilities are limited too, of course. But calculations show that if we are given more fuel, we will work it off and pay it back as no other organization can. Moreover, we will bring in not only monetary profit, but foreign exchange as well--through international flights. Our state receives that same foreign exchange if it sells fuel abroad.

The emergence of "peak periods" in the passenger flow is also a consequence not only of seasonal activity, but the shortage of fuel. In June, July and August, you know, all air routes, especially in the southern directions, are overloaded to the maximum. And at the same time, Aeroflot does not use all its fuel during the winter. The solution is for us to build additional fuel storage tanks. If we have accumulated it during the winter months, we can put it to work in the summer. Such capacities are needed particularly in Siberia, the Far East, and regions of the Far North.

[Question] Storage tanks are really a solution to a certain degree. All the same, we evidently need measures which enable us to resolve the basic problem, for many years ahead...

[Answer] I understand what you are saying. Increasing the economy of the aircraft themselves, of course. Alas, in this indicator--relative fuel consumption--we have lagged behind many West European airlines. That is, if we had more advanced equipment at our disposal, we would be able to carry more passengers with the amount of fuel available today. I am speaking about aircraft such as the Il-96, Tu-204, and Il-114, which are being readied for manufacture. They are much more economical --and consequently more profitable--aircraft than those flying today.

[Question] When will we be seeing the new aircraft?

[Answer] Not tomorrow and not even the day after tomorrow, unfortunately. The Ministry of Civil Aviation will receive the first series of the new generation of aircraft for operation no earlier than 1991. And they will be put into service on a wide scale by the mid-1990's, approximately. This is not a very pleasant prospect, because many foreign airlines are already operating aircraft of this type now.

[Question] Judging by our mail, Aeroflot has a considerable number of internal resources. Here is a collective letter from Alma-Ata aviators. They write that the squadron of Il-62's at the Alma-Ata Aviation Enterprise was disbanded at the beginning of this year. They replaced them with the Il-86 airbus. According to their information, the airbus flies with a full load only in the summer months, but there are many empty seats for the rest of the year. Secondly, the Alma-Ata aviators write, it would be much more efficient not to assign large aircraft, including the airbus, all over the country in groups of five or six aircraft, and to assemble all the Il-86's, let us say, at Vnukovo and to operate them by the "cooperative method," responding expeditiously to an increased passenger flow in various directions...

[Answer] It is too late to be sorry about the Il-62--this aircraft has been used up and written off. And the pilots are wrong about the airbus here: the Il-86 actually takes the place of two Il-62's if we are talking about economy. And even when it is half-loaded the airbus is more profitable and fuel consumption is less by 10 percent. And it serves no purpose for empty seats in the cabin to frighten anyone. In the world of aviation, the rule is followed that loading of 55 to 60 percent is normal and justifies the expenditures.

As far as the concentration of aircraft at base airports is concerned... I am fully in accord with the letter writers here--this method is more efficient. The more aircraft that are concentrated at an airport, the simpler and more convenient it is to maneuver them and the cheaper it is to service them.

But what happens in real life? Many republics, as well as our civil aviation administrations, "cover themselves with a blanket" and try to get hold of as many aircraft as they can for their use. I have already had occasion to go through battles with certain managers. The arguments are like this, for example: we built a new airport, and we were promised heavy mainline aircraft--why don't you provide them? Yes, development of the airport network is important and necessary work, and thanks for the airport. But why should a republic have "its own" airliners without fail? For prestige? To send aircraft wherever they want? Well, this is understandable. But if this is viewed from the standpoint of overall state interests?

[Question] You refused?

[Answer] I had to! Splitting up the fleet of aircraft is unacceptable, and for a great many reasons. This is our firm policy. We are working for the passenger first of all, not for the prestige of one manager or another.

[Question] But judging by the mail, passengers are dissatisfied with Aeroflot anyway. Especially Aeroflot service. On behalf of readers I want to ask: why has the level of service, both at airports and on the aircraft, been frozen on the mark for roughly 60 years?

[Answer] In familiarizing myself with the airports' work, I have seen a great number of our problems: ticket lines, long waits for baggage, rudeness by personnel and the lack of information... We have been studying these problems seriously. Not all of them can be corrected quickly, but we must introduce proper order. I was also struck by the fact that many booths and stalls are closed in the seven evenings. I was struck by the poor souvenir booths, even those trading in foreign currency. I listened to stewardesses, and they complain: "They are forcing us to sell modeling clay and rag dolls. No one will take such 'souvenirs' free of charge."

Both the service at airports and the souvenir trade--all this is really an area that has lagged behind. Although I am convinced that just by developing this area, Aeroflot could help the passenger and make a profit at the same time, first of all. I know of a French firm which brings in a 60-percent profit just from its hotel service. Every square meter of their terminal area provides significant income. They have dry cleaning, shoe repair, and a photography studio here. And the manager of each establishment pays the airline for permitting it on its property.

But our Aeroflot, Ministry of Trade and Ministry of Light Industry are organizations that are completely separate and not interrelated. Each one has its own objectives and tasks. Whatever souvenirs the Ministry of Light Industry gives the "Berezka," those are what it sells. The Ministry of Trade is also a separate "state" at airports, basically looking only for its own profit.

Why should we be just the contemplators of the activity of other departments in our territory? But perhaps the point is to give us credit for foreign exchange, with which we can purchase abroad the souvenirs needed for the people, not those that are unwanted, and sell them ourselves, bypassing the "Berezka"?

Trading at airports during the evening and at night must be significantly improved. We intend to make use of those opportunities provided by the Law on Individual Labor Activity to the maximum extent here. Our specialists are now working out this problem in detail. We want to involve our employees in a useful business first of all, and possibly to establish home cooperatives so that we can always buy fresh piroshki and drink a cup of coffee in the air terminals at night. I see nothing shameful if our people take part in such work. On the contrary, will additional earnings hurt the family?

That is, I want to say that Aeroflot should become the master not only of the clouds, but of the territory which belongs to it on the ground.

[Question] Our "land" has really been lagging behind the sky... The passenger spends so much time to register his ticket and receive his baggage. And try to find a porter at an air terminal...

[Answer] The French have also solved the porter problem very simply. A long pipe, and a chain connecting a cart with the pipe. You put in 10 francs and the lock opens, and you take the cart and use it. After using the cart, you bring it back to the pipe, attach the chain, and your 10 francs are returned. And if you have left the cart in the waiting room (let's assume you are late for your flight), you will always find a person who wants to "earn" 10 francs and return the cart to its place.

We intend to roll out 2,500 carts for hand luggage to the waiting rooms as early as this year. True, we still do not have locks such as the French have yet. We will have to rely on the honesty of the passengers or issue the carts after obtaining a small deposit.

As far as ticket registration is concerned, and obtaining baggage... Yes, the capacity to accommodate passengers at our airports leaves much to be desired. In our estimation, they are passing through twice as many passengers as they are able to without creating a crush. Here are the lines, the inconvenience in registration, and the delays in issuing baggage. All this is a consequence of the fact that the incorrect path has been chosen frequently in planning and building airports. A fresh example: it was planned to spend 37 million rubles to build a new airport in Baku. It calls for sumptuous decorations, marble, and nickel, but the technical services have not been developed. The funds need to be reallocated and the values reoriented. Palaces and monumental buildings—these are not service and benefit for the passenger. He pays no attention to the terminal's architectural merits if he is tired of waiting for his baggage. Mechanization, automatic machines, electronics, and computers with a memory--this is what is required today for our ground services. There is no end of work here.

[Question] Aleksandr Nikitovich, I want to interrupt you here for a second to read a question that the Krasnodar agricultural aviators requested that we put to you. They ask: "How does the minister regard the problems of small aircraft? Won't he put them in second place after becoming engrossed in the complex concerns associated with large aircraft?"

[Answer] No, I will not. We have a common economy, and I would not divide it into "main" and "auxiliary." Especially as IZVESTIYA, judging by past articles, has taken small aircraft operations under its wing, as I understand it. There are really many unresolved problems here. I am very disturbed that a pilot of small aircraft has actually been deprived of prospects for transferring to large aircraft, for example. He began his career in an An-2 and ended it in the same aircraft. This stems from the fact that the pilot has a secondary specialized education, not a higher education, and he acquired

it in a secondary school. But after all, prospects are important for the person, and he also dreams of flying on international routes.

This is why we propose to reorganize a number of schools into higher educational institutions.

The planning of airborne chemical treatment operations and mutual settlements between farms and crews--everything is far from being completed here as well. And I am impressed by the agricultural aviators' struggle for a healthy economy, I would say, an honest economy. The Krasnodar aviators now are asking our consent for a new economic experiment. We are analyzing their suggestion, and I think the experiment will take place. But this is not the only thing that is important. The people are carrying out restructuring realistically, they are not indifferent, and they are looking for what is new. An example worthy of imitation. And a lesson to some extent for our other aviation detachments. After all, it is no coincidence that the Krasnodar aviators found support in the party kraykom and krayispolkom. The pilots are doing their job, and this never will remain unnoticed.

[Question] Another question from a reader's letter: "The housing problem in Aeroflot. Why is it significantly more critical for us than in other ministries and departments? Are there prospects in this area?"

[Answer] Improved housing is needed for 3,300 members of our cockpit crews. And in general, every fifth aviation employee is standing in this line. A critical social problem. I will try to do everything in my power to resolve it. Since 1986, Aeroflot has been authorized to transfer 10 percent of its capital investments from industrial construction to social and housing construction. We hope that after the shift by the sector's enterprises to full cost accounting and with application of the Law on State Enterprises, and this will be as early as next year, we will have new opportunities for housing construction as well.

[Question] The problem is really serious. But here is a problem within a problem: why does an aircraft commander who is responsible for the lives of hundreds of people stand in the common line to obtain housing? I am quoting lines from a letter: "The five of us are living in a two-room apartment. In the morning I leave for the airport without getting enough sleep and irritable. I sit down in the cockpit and my thoughts are about something entirely different..."

[Answer] I raised this question at the first collegium meeting. Indeed, why don't the commander and navigator of a passenger airliner have any privileges? A pilot has special rights in military aviation. And this is perceived as being proper by everyone, of course. Why is it otherwise in Aeroflot? After all, the person holds lives in his hands, and he has a tremendous responsibility. And a normal apartment--this, if you like, is part of your health, your vitality and well-being.

I feel that it is incumbent upon me as minister, as well as the deputy ministers and all members of the collegium at all levels, to show the specific nature of civil aviation and its tension related to risk and heavy emotional burdens.

[Question] And should a pilot's wife be distinguished from other wives?

[Answer] She should! I say this as an aircraft commander. A critical situation or conflict in the family, and the pilot is not in the mood for a flight at all. The wife should be aware of the nature of the pilot's work, be able to suppress conflicts, and influence the mood of her husband, bearing mind the kind of work he is doing.

[Question] And a final question: what are the qualities a pilot should possess? What would you advise a young person who plans to choose his place of work in the sky?

[Answer] In choosing this profession, a person should love it first of all, and the main thing is for him to evaluate his health himself, without any medical commissions. Because a pilot's profession is not one where you can say to yourself: I'll try it and test myself, and if I don't like it or I cannot do it, I will leave it. If you feel doubt, make the decision right away.

A pilot should feel pride in being part of flight work. An indispensable condition is that he should be an honest person. It is my belief that precisely pride in his work and intrinsic decency enable the pilot to come out of extreme situations creditably--both in the sky and on the ground.

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NEW ROUTE, AIRFIELD FACILITIES FOR STREZHEVOY, TOMSK OBLAST

Moscow IZVESTIYA in Russian 13 Jul 87 p 2

[Report by IZVESTIYA correspondent L. Levitskiy: "The Yak-42 Is Flying to Strezhevoy"]

[Text] Tomsk--Previously the journey to the northern oil city was not a simple one. At first we had to get as far as Nizhnevartovsk, Tomsk, or Novosibirsk, and there were more than enough passengers there. This is why the city jointly renovated the airport and built an excellent runway for the Yak-42 or the Tu-134.

And the fact that it is excellent has been confirmed by the first proving flight and the findings of the Moscow Commission of Aeroflot, and the Strezhevoy-Ufa-Moscow route has been approved.

The lucky ones who were the first passengers entering the airliner to applause were 40 children flying to pioneers camp and more than 70 adult vacationers. They were seen off enviously, not because of a desire to get on the very first holiday flight, but simply because there will not be others for a long time yet. The applause was heard no more, and everything remained as it was before. The Ministry of Civil Aviation promises to begin regular flights to Moscow only next year. And this decision is absolutely incomprehensible. The runway was built in accordance with the aviators' plan. The appropriate applications and substantiations were also put in order in time. Why should residents in the North put up with transportation adversities for many months more because of the lack of efficiency at the sector's headquarters?

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Il-86, Yak-42 REPLACING OLDER AIRCRAFT ON CERTAIN ROUTES

Moscow IZVESTIYA in Russian 3 Jul 87 p 1

[Interview with Yu. Nesterov, chief of a department of the Aviation Work and Transport Operations Main Administration, by V. Belikov under the rubric "Fact and Commentary": "To the Urals by Airbus"]

[Text] Aeroflot's flagship, the 350-seat Il-86, has completed Flight 261, linking Domodedovo Airport in the capital with Koltsovo Airport in Sverdlovsk, for the first time.

At the height of the summer flying season, Tu-154 airliners have been making five daily flights on this 1,500-kilometer route, plus one flight four times weekly. However, passenger traffic on the popular route has remained heavy.

"We are now planning to use the airbus," Yu. Nesterov, chief of a department of the Aviation Work and Transport Operations Main Administration, reported. "The Il-86 will fly between Moscow and the largest center in the Urals twice daily. The Tu-154 will continue to make one daily flight and one flight four times weekly to 'assist' it."

[Question] What will the shift to use of the airbus on this route mean?

[Answer] First of all, the opportunity to fly an additional 1,000 passengers monthly. In other words, three-fourths of all air travelers between the two cities will now be flying under more comfortable conditions. Reducing the number of aircraft serving the route will make it possible to save 3,000 tons of aviation fuel, the lack of which sometimes limits the opportunities for air transportation. Organization of air traffic on one of the heaviest main routes from the country's center to the Urals, Siberia and the Far East will be improved as well.

Six decades ago, the trans-Siberian air route was begun from Moscow and through Kazan and Sverdlovsk. It was precisely here that Soviet aviators began making regular night flights. For the pilots' orientation in the darkness (radio communications were not being used yet), towers with searchlight beacons were erected every 60 to 80 kilometers and special sites—air stations—were selected for intermediate landings in the event that aircraft required repairs or additional fuel.

Guided by the light of the beacons, the first domestic all-metal heavy aircraft, the ANT-4 "Strana Sovetov," flew to the East in August 1929. The four aviators--S. Shestakov, F. Bolotov, B. Sterligov and D. Fufayev--flew across our country to Kamchatka and farther--to the United States. They arrived there after laying an air bridge across the Pacific Ocean...

The airbus passengers of today are greeted at the Koltsovo Airport on a specially equipped ramp situated near the renovated runway, which is capable of accommodating a 200-ton aircraft. In the cabins of the landing aircraft, a stewardess reminds the passengers that the flight is ending at the airport where the first jet aircraft--the BI-1, piloted by G. Bakhchivandzhi--was flown...

[Question] What are the cities in the country where Il-86 routes are still to be flown?

[Answer] This aircraft begins flying from Leningrad to Alma-Ata at the same time that flights from Moscow to Sverdlovsk are begun. The capital will be linked by an airbus route with Aktyubinsk in August, and with Kemerovo next fall.

In the future, the Il-86 will begin flying from Sverdlovsk to Leningrad and Tashkent.

More news--on the first day of July the Yak-42, designed to carry 120 passengers, replaced the small Yak-40's on the resort route from Lipetsk to Sochi.

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Tu-154 LANDING INCIDENT AT TBILISI REPORTED**Accident Averted**

Moscow PRAVDA in Russian 9 Jul 87 p 6

[Report by PRAVDA correspondent G. Lebanidze: "They Found Out After Landing"]

[Text] Tbilisi--Nothing had pointed to the problem... A Tu-154 of the Georgian Administration of Civil Aviation with 160 passengers had made a normal flight from Sverdlovsk to Tbilisi. The airliner had just prepared for landing, and it became evident here that the nose gear had jammed and was not "locked." The aircraft commander, Pilot First Class Tengiz Gvaradze, made the decision—to land the aircraft on two "legs." The fuel had to be used up for this first of all. The airliner climbed again and took up a course for Sukhumi... It returned again. There was still fuel in the tanks, and the aircraft had to circle the airport.

The crew worked efficiently under these extreme conditions, demonstrating great courage and high skill. The aircraft landed safely and "poked" its nose into the runway only after stopping. The many passengers learned of the mortal danger which had threatened them only after they were on the ground.

PRAVDA Provides Further Details

Moscow PRAVDA in Russian 10 Jul 87 p 6

[Report by PRAVDA correspondent G. Lebanidze: "Courage Was the Major Factor"]

[Text] Tbilisi--Yesterday PRAVDA reported on the accident at the Tbilisi airport. Today we provide details on this event.

The Tu-154 aircraft with 164 passengers on board was to have landed at the Tbilisi airport 7 hours and 5 minutes after departing Sverdlovsk. The airliner headed toward the runway and suddenly soared up again and flew away...

"After receiving the order to lower the landing gear from the aircraft commander, Pilot First Class Tengiz Gvaradze," navigator Igor Prisyazhnyuk said, "I saw that the nose gear was not "locked"... The red signal light

which was on was evidence of this. I reported the situation to the aircraft commander. I recalled here that Tengiz Illich and I had a similar case about a year ago; then it turned out that the gear had come down, but the signal light was not working. We asked the ground. They confirmed for us this time that the nose gear in fact was "not extended" completely... There was nothing left to do but land the aircraft on "two legs."

The commander gave the order to Senior Flight Attendant Ize Dalakishvili and attendants Marina Kananadze and Zurab Skhirtladze to ensure that all passengers had their seat belts securely fastened.

At that moment the airport resembled a beehive that had been stirred up. Ambulances and fire engines were speeding here from the city. They covered the runway with fire-extinguishing foam.

Flight Engineer Petr Shkarivskiy went to the passengers in the cabin. He calmly passed down the aisles, and it was evident from everyone's appearance that nothing in particular was happening.

So the aircraft approached for landing. They reduced speed to the minimum and landed the aircraft as usual on "two legs," holding the speed down sharply right here... The worst part was ahead, when the nose section of the fuselage, deprived of its support--the landing gear--would come in contact with the runway; after all, a fire could result from the friction. Everything turned out safely, fortunately. The precise calculation and skill of the crew did their part. After coming to rest on its nose and sliding down the runway, which had been covered with fire-extinguishing foam, the aircraft froze in place...

Z. Baratashvili, the deputy chief physician of the First City Clinical Hospital, noted after the landing that members of the crew who were there for preventive treatment had undergone considerable stress, of course, but...

"They are fine young persons, and they will soon be ready for the next flight," he said.

So a disaster was averted, thanks to the courage, self-control, and high professionalism of the airliner's crew.

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AEROFLOT CHANGES REGULATIONS TO MEET SUMMER PASSENGER RUSH

Moscow IZVESTIYA in Russian 18 Jul 87 p 2

[Interview with L. Ilchuk, chief of the Aviation Work and Transport Operations Main Administration of the Ministry of Civil Aviation, by V. Belikov: "Aeroflot is Changing the Rules"]

[Text] [Question] The second half of the summer is the most intensive period of the year for civil aviators. Every day more than a half million persons take advantage of Aeroflot's services at this time. Can we help those who suffer waiting for the cherished ticket for the flight needed, even if only part way?

[Answer] Certain new rules for transporting passengers will be put into effect in Aeroflot on 1 August this year.

Aviation enterprise managers now are authorized to establish a 5-percent reserve of tickets sold for each flight. They are being used for citizens who need priority transportation—ill persons, close relatives who are asked by certified telegrams to come to the location of an accident, and other categories of passengers.

Persons who have lost their reservation for reasons beyond their control will be able to obtain seats from this reserve. For example, if an aircraft from Kamchatka is late arriving at a transfer airport—Novosibirsk, let us say—because of bad weather, and the so-called "connecting flight" which a passenger was to have taken to fly farther south has already departed, the reservation for the second half of the trip is automatically canceled.

Now the transit dispatcher at the airport will be able to offer such a passenger who is delayed through no fault of his own a seat on one of the next flights in the same direction, but no earlier than 3 hours before the aircraft's departure.

Two other innovations in the rules are directly related to those persons with travel authorizations for relaxation in sanatoriums, rest homes and guest houses. A special quota (proportion) of the air tickets which are being sold to vacationers through the cashiers of the health resorts where they are staying is being set aside for them now. The tickets that remain unsold are

on open sale for 10 days before the flight. It is important to note that the number of tickets set aside in the quota for those on vacation under travel authorizations is determined by the manager of the aviation enterprise in coordination with local party and soviet organizations.

As of 1 November, the periods for advance sale of direct and return air tickets and seat reservations in all other cities in the country are being increased as well. These operations now will be conducted for 30 days before a scheduled flight.

The number of points for advance ticket sales and seat reservations for flights from cities in the Far North, Siberia and the Far East, and to and from the country's resort areas is being increased. Sales are made for 40 days and reservations for 6 months before the departure date.

[Question] At the end of last year I had occasion to become familiar with the tiresome and unwieldy procedure for returning an unused ticket to one of the ticket offices in Moscow. Are there any changes in these rules?

[Answer] There are. As of 1 August, Aeroflot ticket offices will be able to refund money for air tickets without the signature of the administrator or supervisor of the agency when the flight is canceled or the date and time of departure or the route is changed.

The refunding of money for an unused ticket that is returned, even one registered for another person, is being speeded up, and simplified. It is sufficient just to produce the tickets with your identification document.

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